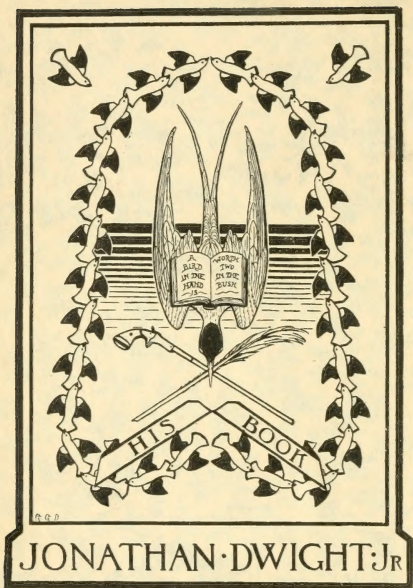


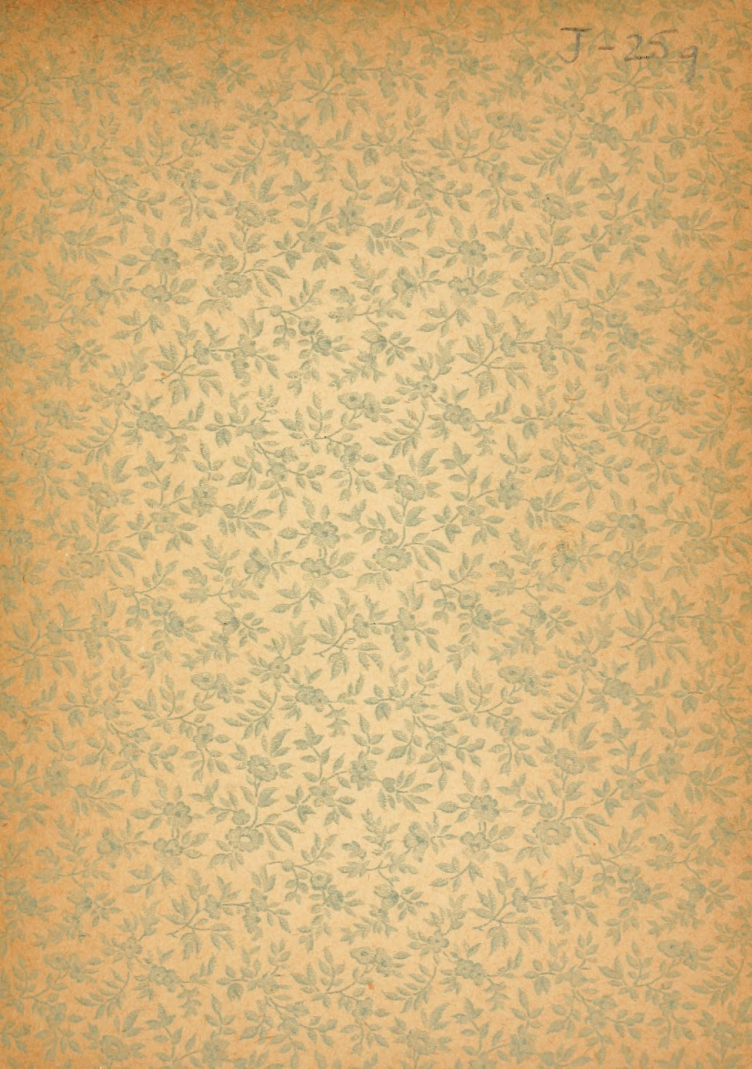
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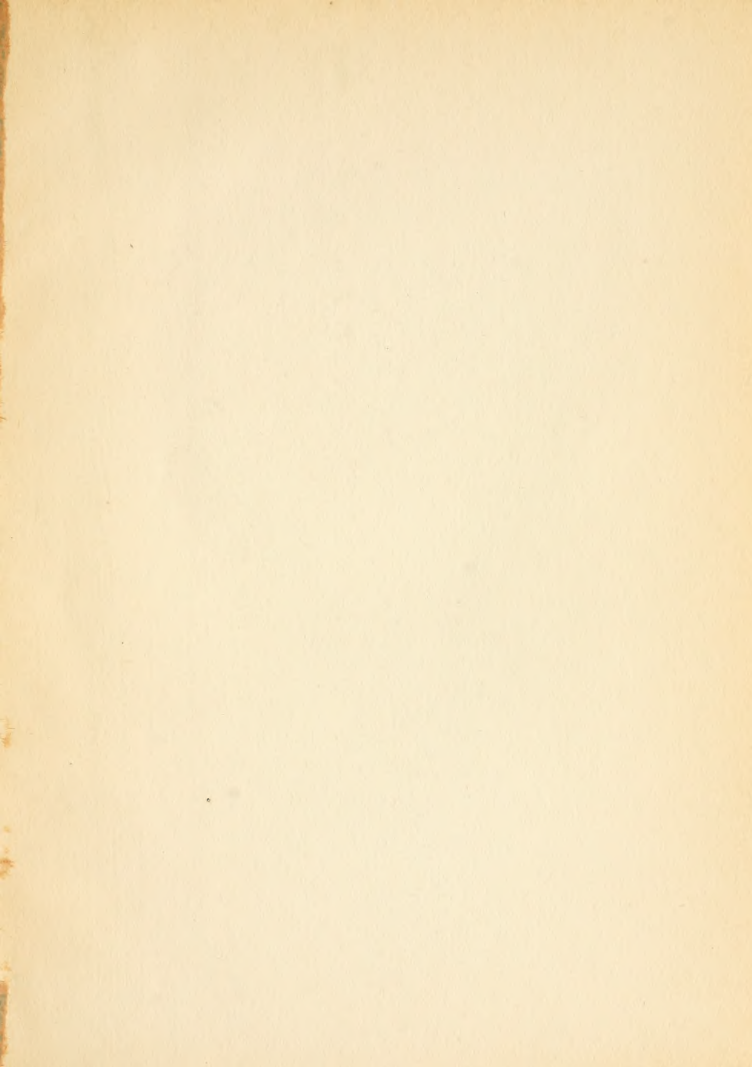
Sparrows & Finches
OF
New England

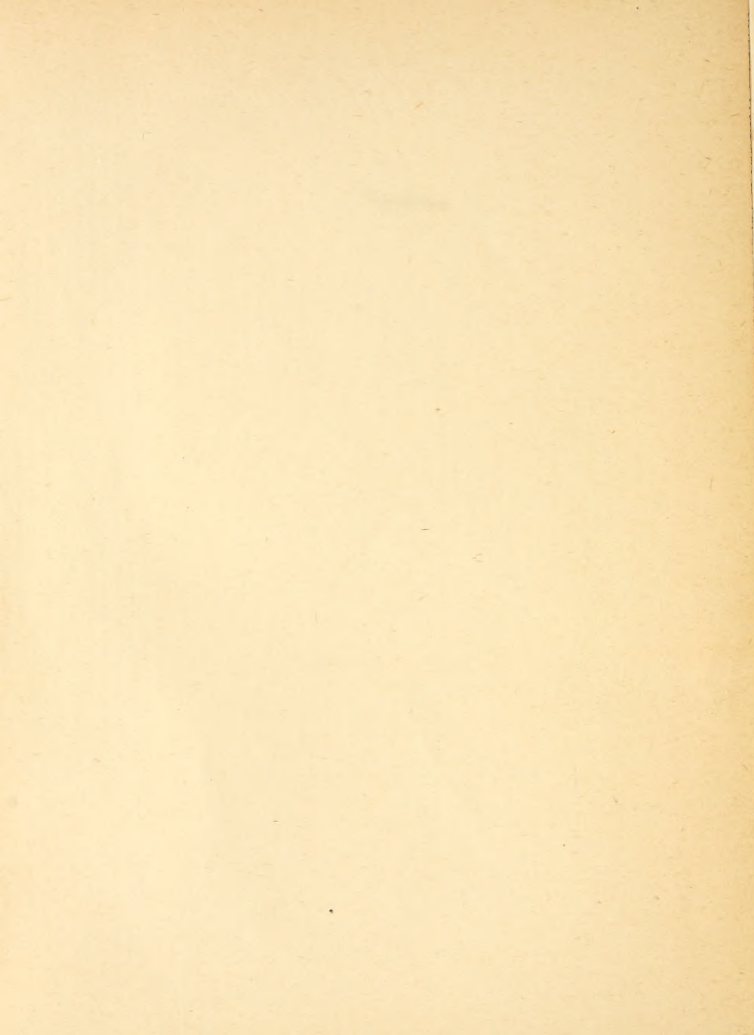
C. J. MAYNARD



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H A N D B O O K

OF THE

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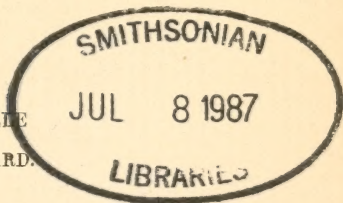
OF NEW ENGLAND.

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17 Fig.
18 Plates

NEWTONVILLE
C. J. MAYNARD.
1896.



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DEDICATED
TO THE
SCHOOL TEACHERS OF NEW ENGLAND
IN MEMORY

OF THE MANY PLEASANT HOURS WHICH HAVE BEEN PASSED BY
THE AUTHOR IN COMPANY WITH MANY OF THEM IN THE LECTURE
ROOM, AND WITH THE BIRDS IN THE FIELDS AND WOODLANDS.

INTRODUCTION.

My reason for writing a book upon birds with such a limited scope as the present, is because I am sure, from a somewhat extended experience, that it is better for those beginning the study of ornithology to first become thoroughly acquainted with some one group of birds, than to acquire a smattering knowledge of many. I have therefore selected the largest and in some ways the most important family of our New England birds, partly, because it is the most extended, but more particularly, because there is no season of the year, when some members of it are not to be found with us.

In my walks in the fields and woods with my many pupils, I have found that some experience great difficulty in learning to distinguish birds, either by sight or by hearing their songs. This difficulty, it appears to me, is really due to the fact that the observer is trying to grasp an entirely new, and too vast a subject without a sufficient training of eye and ear.

This being undoubtedly the case with so many, it appears best to begin with a group of birds, most of which are of a sufficient size to be readily seen and which not only have prominent, characteristic markings, but which also have songs which are readily distinguishable. We will take as an example three of most closely allied species which we have, all belonging to one genus of small Sparrows, and all having the characters of a clear crown, forked tail and no streaks beneath; the Chipping, Tree and Field Sparrows. The first can be readily told by the black line through the eye, the second

by the dark, central spot on the breast, and the third, by the absence of both these markings. The song of the first, is a series of unmusical, but lively, trills that of the second a loud, clear chant, preceded by two separate notes, while the lay of the third is one of the sweetest bird songs ever heard, consisting of a kind of avian musical scale. All of these three can be distinguished by the markings given by any one who will take the trouble to learn them, and I have yet to see any one who is at all interested in birds. who cannot distinguish the songs after hearing them once or twice.

It is very obvious that this simple beginning trains both eye and ear to observe markings which are more difficult to see, and to note variations in songs which is far more difficult to learn.

While we can never hope to teach ornithology in our Public Schools as a science, it becomes necessary for the pupils to acquire some knowledge of birds, and this knowledge had better be founded upon a solid basis in a form which can be retained in the mind, rather than by a diffusion over a large area which is much more likely to be only transitory. Hence I have recommended the study of this single family, some members of which can be seen by pupils every day throughout the year.

Thus a foundation will be laid which (should inclination or necessity arise) cannot only be built upon in the future life of the pupil, but which will aid in teaching habits of observation, and in training of the eye and ear, which will prove of the utmost benefit to pupil in any vocation of life. I have ventured to dedicate this little book to the school teachers of New England, for it is to the pleasant intercourse

with a large number of them, through the many years that it has been my privilege to give them instructions in zoology, that it owes its existence. I have long seen most clearly that such a book is needed by them in the lessons which they are now called to give to their pupils, and that need I have now endeavored to supply. If in the writing of it I have added one iota to the happily growing sentiment for the protection of our native birds, which has been so nobly fostered by our school teachers, I shall feel amply repaid.

I have added on the following page a diagram of a bird, giving the names of some of the parts which are mentioned in this work.



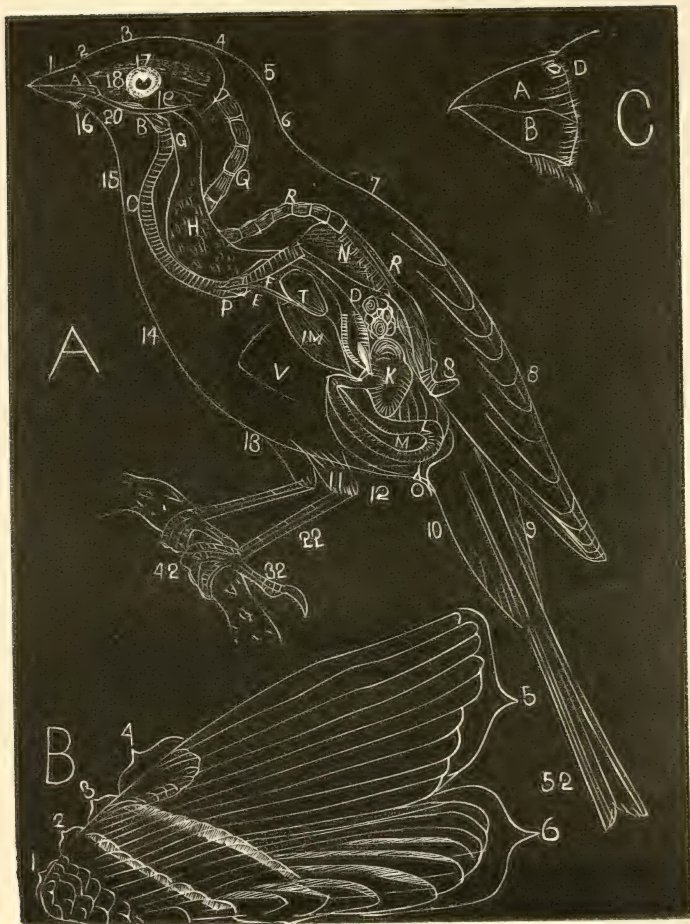


DIAGRAM AND IDEAL SECTION OF CHIPPING SPARROW.

A

EXTERNAL PARTS.

1, Bill ; 2, Forehead ; 3, Crown ; 4, Occiput ; 5, Nape ; 6, Hind neck ; 7, Back ; 8, Wing ; 9, Upper tail coverts ; 10, Under tail coverts ; 11, Tibia ; 12, Abdomen ; 13, Belley ; 14, Breast ; 15, Throat ; 16, Chin ; 17, Superciliary region ; 18, Lores ; 19, Ear coverts ; 20, Maxillary ; 22, Tarsus ; 32, Hind toe ; 42, Front toe ; 52, Tail.

INTERNAL PARTS.

A, Tongue ; B, Superior Larynx ; P, Inferior ; c, Windpipe ; E, Sterno trachealis ; F, Bronchial tube ; G, G, Gullet ; H, Crop ; K, Stomach ; J, Proventriculus ; L, Fold of duodenum, M, Pancreas ; o, vent ; D, ovaries ; Q, Vertebrae of neck ; R, Vertebrae of back ; S, Tail bone ; T, Heart ; N, Lungs ; v, Keel ; I, M, Liver.

B

WING OF CHIPPING SPARROW.

1, Lesser coverts ; 2, Middle coverts ; 3, Greater coverts ; 4, Spurious wing ; 5, Primaries ; 6, Secondaries.

C

BILL OF CARDINAL GROSBEAK.

A, Upper mandible ; B, Lower mandible ; D, Nostril.

FINCHES, SPARROWS, GROSBEAKS, ETC.

Fringillidae.

FAMILY CHARACTERS.

The external characters of this large and important family, which is largely represented throughout the world, and of which there are many species in our New England fauna, are, first, the primaries or outer quills are nine. That is, there are nine flight feathers growing upon the bones of the hand and waist. See fig. 1 where I have given a cut of the primaries of a White-throated Sparrow.

Second, the bill is quite short and cone-shaped, while the cutting edge of the upper mandible is strongly angled near the middle, but it is not notched. See fig. 2, A, where I give a side view in outline of the bill of a Rose-breasted Grosbeak, and at ib, B, a section of view of the same bill cut through just back of the nostrils. The form of the wings and tail are variable; these differences will be noted under Generic Characters.

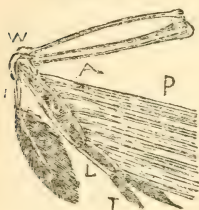
The general form of birds of this family is quite stout and robust but this also varies somewhat in different genera.

Prominent internal characters are, first, the gullet or oesophagus is more or less dilated into a crop for the storage of food (see fig. 3, P).

Second, the walls of the stomach are greatly thickened and it is lined with a hard, mucous membrane (see fig. 3, b).

This enlargement of the gullet into a species of crop and the thickening of the walls of the stomach is not, as is quite usual in birds so characterized, accompanied by a special elongation of the coeca, for the natural food of Sparrows etc., is usually the seeds of plants and trees which contain more

FIG. 1.



Base of primaries, with the webs removed, of right wing of a White throated Sparrow. A, forearm, w. wrist p, primaries, L, digits. T, spurious primaries.

FIG. 2.



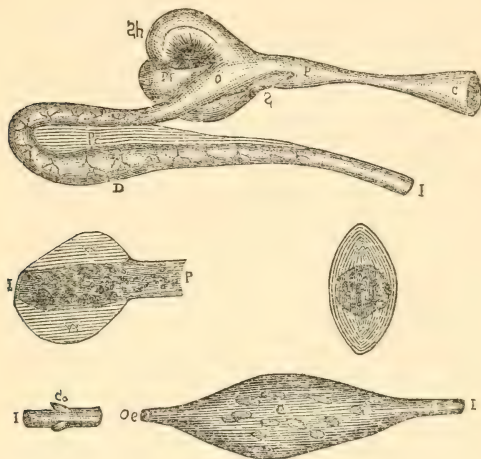
Bill of Rose-breasted Grosbeak. A, side view ; I, Section at base.

nutritious matter than much food eaten by the Grouse and allied groups, which do have the elongated coeca for retention of material which contains a comparatively small amount of nutritious matter, hence this must be retained in the intestine for a considerable length of time in order that all which is of benefit to the bird may be assimilated.

The sternum, which with its accompanying bones, the coracoids, scapula and furcula (see fig. 4) are all subject to considerable change in varying genera. The coracoids are never longer than the top of the keel but are sometimes equal

to it, as in the Swamp Sparrow, they are, however, as a rule shorter than it. The marginal indentations (see fig. 4, m,) are two, and equal in depth the height of the keel. The keel is

FIG. 3.



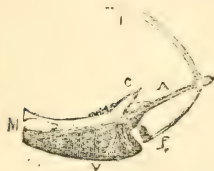
Stomach, crop etc. of English Sparrow.

C, gullet; p, proventriculus; s, spleen; sh, stomach; pl, pylorus; o, beginning of intestine d, duodenum; p, pancreas; i, intestine ip, lining membrane of stomach: (longitudinal section: transverse section to right) w, walls of stomach in both sections; oe, I, dilatation of the gullet, forming a kind of crop; co, coeca.

variable in height, being in the Fox Sparrow about as high as one half the length of the coracoids (see fig. 5,) but in the Shore Finches it is very low, not more than one-third as high as the length of the coracoids (see fig. 4, v).

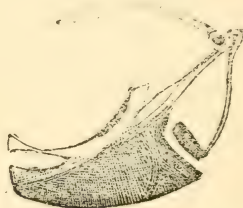
As among our New England members of this family, we find some of the finest song birds in the world, for example, the Rose-breasted Grosbeak and White-throated Sparrow, we naturally expect, to find the muscles of the inferior larynx or syrinx well developed, and the accompanying muscular apparatus also well developed. This is the case, and we find all the six pairs of song muscles, of which I give an example in fig. 8, with an accompanying explanation, present, and also the tympaniform and semiluna vibrating membranes, also

FIG. 4



Sternum of Shore Finch
v, keel; m, marginal indentation;
f, furcula, A, coracoid,
i, scapula; c, costal processes.

FIG. 5



Sternum of Fox Sparrow.

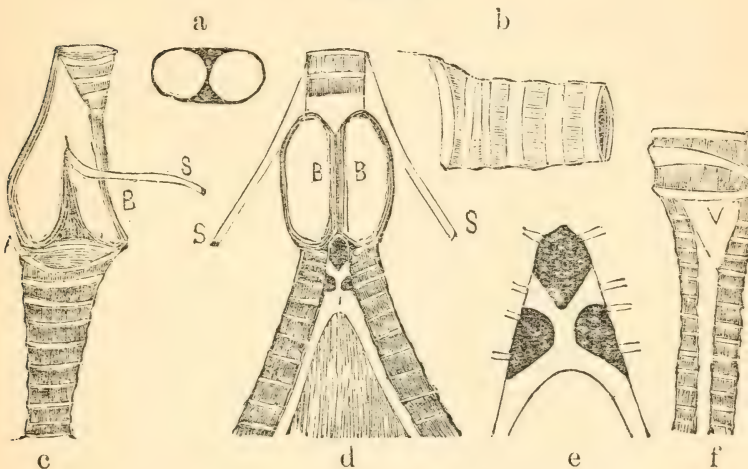
figured in the above mentioned cut. There is, however, some variation in this respect. See fig 6, where I give a cut of the muscular apparatus of the Evening Grosbeak with explanation of the varying parts.

Some of our New England Sparrows, on the other hand are sadly deficient in song, for example, the Yellow-winged and Sharp-tailed Sparrows.

Most of our New England species are migratory, but with some this instinct appears quite feeble, for example, the Gold and Purple Finches which usually remain in some parts of

our limits all winter; our summer residents of these species may possibly pass on south of us, and their places be supplied by others of the same species from further north. The Red Crossbills have, however, not only quite lost the migra-

FIG. 6



Vocal Organs of the Evening Grosbeak.

s, s, s, sterno trachealis: C, B, A, bronchialis: f, g, lower tracheal ring: d, i, Y-shaped muscle: v, vibrating surface: a, os-transversale.

ting instinct, but also that love for any particular locality which causes birds of most other species to return year after year to the section in which they were born. They have, in short, become true nomads, wandering up and down the land seeking food where it is most abundant, and breeding at va-

rying seasons from February until August in almost any suitable section which will offer sufficient food upon which to rear their young.

The following, is the explanation of the musical apparatus of a typical Singing Percher. Birds produce sounds, not as with man, and most other mammals, with the upper, or superior larynx, but with the lower or inferior larynx, situated just above the junction of the bronchial tubes with the trachea, or windpipe. (See fig. 6, d, where a front view of a portion of the windpipe, lower larynx, and bronchial tube is given, also, fig. 8 where is given a side view of these parts in another species).

I will first give an explanation of the sound producing organs. In fig. 7, I have given a cut of a side view of a portion of the windpipe, D, with one of the bronchial tubes removed, leaving a cavity at v, thus exposing a small, thin, narrow bone, known as the transverse bone, J, which extends from the front to the back of the larynx, just above the junction of the bronchial tubes. This bone may be also seen in fig. 6, A, where a transverse section of the larynx is given of another species.

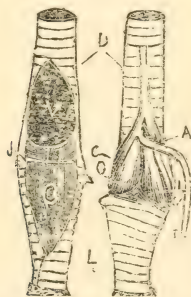
The transverse bone supports a small membrane, known as the semiluna membrane, which thus stands upright between the bronchial tube, just as a reed stands upright in an organ tube. (see fig. 7.)

The trachea or windpipe is made up of bony rings which completely encircle this organ, but in the bronchial tubes these rings do not extend wholly around, but are interrupted to a greater or less extent on the inside of the tube, hence are known as the bronchial half rings.

Below the transverse bone, in the interspaces caused by the interruption of the bronchial half rings are v-shaped membranes which stretch from side to side of the ends of the half rings. These are known as the tympaniform membranes. See fig. 7, c, and fig. 6, v. All the sounds which Singing Perchers are capable of uttering are, with a few exceptions, produced with these three vibrating membranes, namely one semiluna and two tympaniforms.

These membranes are operated by six pairs of muscles best seen in fig. 8. Descending the trachea we come first, to a

FIG. 7. FIG. 8.



Inferior larynx of typical
Singing Percher.

long muscle which lies on the side of the organ and which divides into two parts, one going to the front, and one to the back of the larynx, and adheres to either end of the transverse bone. This is known as the broncho trachealis and its division as the front and back broncho trachealis. Its function is to oscillate the transverse bone, thus producing various tones, as the air impelled by the lungs through either bronchial tube, passes along its sides, or is drawn downward from the tra-

chea above it into the lungs, in a similar manner to which a reed vibrates in an organ tube.

All of the shriller and most varied notes are produced by this semiluna membrane.

Below the division of the broncho trachealis is a long, thin muscle, which, emerging from this point, passes down on either side of the bronchial tubes to terminate on small spurs of the sternum which are pushed out on either side just outside of the junction of the coracoid bones, and which are known as costal processes (see fig. 4, c).

The function of the sterno tracheal muscle is to draw downward the whole larynx, thus loosening the normally tense tympaniform membranes, their vibration then ceases or becomes muffled, just as the loosening of the strings on a drum muffles the vibration of its head.

Below the sterno-trachealis is another divided muscle, the bronchialis which extends from the larynx to the upper bronchial half rings. There are also front and back bronchialis muscles, and to the back of the hindermost is a third division of this muscle known as the short bronchialis. The function of the three divisions of all the bronchialis muscles, is to contract and draw up the top bones of the bronchial tubes, thus rendering more tense the upper part of the tympaniform membranes, producing varying tones, but all of the sounds produced by this membrane are in a minor key. (ib. o, I, v.)

Thus to the adjustment of the three membranes mentioned by the six pairs of muscles described, is due most of the sweet songs of birds, especially in the present family. The effect of the double notes produced by the tympaniform and semiluna

membranes may be heard and clearly recognized in the songs of the Robin and White-throated Sparrow.

There is considerable variation in the size of these membranes and in their governing muscles in the various genera of this family ; as a rule the divisions of the muscles are not as shapely defined as in the typical specimen given, which is that of a Crow. One of the most extreme variations in the larynx may be seen in the Evening Grosbeak as given under that species.

GENUS. SILK BUNTINGS. SPIZA.

Bill, rather thick, but not especially Finch-like. Wings, very long and pointed. Tail, short and not forked, but slightly emarginate. We have one species.

Black-throated Bunting.

SPIZA AMERICANA.

Plate I, fig. 1

MALE. General color, ashy yellow above, tinged with greenish, and streaked with dusky ; chestnut on upper parts of wings, brown on remainder and tail. White beneath, line over eye and on lower jaw, middle of breast, under wing coverts and edge of wing, yellow. Triangular patch on throat and small one on back, black.

FEMALE. Similar, but duller, and the black of breast and throat not as extended. Young male similar to the female.

DIMENSIONS. Length, 6.75 ; stretch, 10.75 ; wing, 3.35 ; tail, 2.65 ; bill, .55 ; tarsus, .75.

COMPARISONS. Quite unlike any other of our Sparrows, the black throat and yellowish colors being characteristic.

NESTS AND EGGS. Nests placed in trees or bushes, rather bulky, composed of grass, leaves and rootlets. Eggs, three to five, oval, bluish green, unspotted, .60 by .75. Time of nesting, early June.

GENERAL HABITS. The Black-throated Bunting was a common species in Southern New England a half a century ago, but is extremely rare, even there. In Massachusetts, it is exceedingly rare, but has been known to breed. It should be looked for on the margin of fields, when it perches on small trees or fences, where it sits quite upright as it sings. Its yellowish color and black throat will serve to distinguish it at a distance.

SONG. Its lay is simple, consisting of about five notes, the first two sounding like chip-chip, being given slowly, the last three, chee-chee-chee, being given more rapidly.

GENUS. TRUE SPARROWS. SPIZELLA.

Bill rather slender. Wings longer than the tail or equal to it. Tail, slightly forked. Colors above reddish, streaked on the back. Top of head always reddish and unstreaked in adult. No streaks below in adults. Wings slightly banded but there are no conspicuous white markings on the tail. We have three species. Sexes, similar.

Chipping Sparrow.

SPIZELLA SOCIALIS.

Plate I, fig.2.

ADULT. Form, rather slender. Top of head chestnut red, black on forehead, which is divided by a narrow line ; de-

PLATE 1.



Fig. 1. Black-throated Bunting.



Fig. 2. Chipping Sparrow.

cudely ashy below. Bill, black. Back, reddish, paler than on the crown from which it is separated by a distinct ashy collar, and both collar and back are quite broadly streaked with dark brown. Over eye an ashy line and below this behind eye, a black line. Wings and tail brown, the latter, slightly white banded. No spots nor streaks below.

YOUNG similar, but with the crown and rump black streaked. Nestlings, are streaked below.

DIMENSIONS. Length, 4.5 ; stretch, 8.50 ; wing, 2.65 ; tail, 2.35 ; bill, .38 ; tarsus, .63.

COMPARISONS. Aside from the two following species, both of which belong to this genus, and which are compared in the descriptions with this, the Chipping Sparrow, is the only New England Sparrow which combines the clear red head, with the unspotted under parts, excepting the Swamp Sparrow, but this is a larger bird with comparatively shorter wings, is white below, with an ashy band across breast.

NESTS AND EGGS. The nests are compact structures, cup-shaped, but shallow, about three inches in diameter, composed outwardly of rootlets and lined with horse hair. Eggs, four or five in number, oval in form, bluish green in color, spotted, dotted and lined rather sparingly, with black and lilac. Although I once had an unspotted set of eggs, it is usual to find some spots. Dimensions, .75 by .50.

GENERAL HABITS. The Chipping Sparrow is the most social of all our native Sparrows, frequenting orchards, often in the immediate vicinity of houses. Living as they do in direct association with human beings, these neat little birds become exceedingly tame, and will search for food in summer about our open doors, and when tempted by crumbs of bread, will often even venture to cross the threshold.

They arrive from the South about the middle of April, begin to gather material for their nests in early May. They often build in an apple or other fruit tree, placing the nests either high or low, depending upon the size of the tree. The eggs are deposited about June 1st, and the young make their appearance about the middle of the month. At this time the Chipping Sparrows are nearly wholly insectivorous, gathering large numbers of canker and current worms for their own food and to supply their young. Thus far they are exceedingly beneficial to mankind, but they are not always useful, for they destroy quantities of honey bees for food, as I have myself witnessed many times. I once found twenty or more nests in a single season in a small orchard, near which stood several bee-hives and the sparrows probably fed their young largely upon bees. They are sometimes called hair birds on account of the horse hair with which they line their nests.

Early in September the Chipping Sparrows gather in large flocks in company with Field, Savannah, Vesper and other Sparrows, in cultivated fields in order to feed upon the newly ripened seeds of weeds. All depart together for the south in October. They remain all winter in the Southern States.

SONG. The lay of the Chipping Sparrow, from which it probably derives its name, consists of a series of rather unmelodious chirps, but emitted in quite a lively manner, as the bird sits perched in some conspicuous place. for like most Sparrows, it never searches for food while singing. but gives its exclusive attention to its musical efforts.

Tree Sparrow.

SPIZELLA MONTICOLA *

Plate II. Fig. 1.

General coloration similar to that of the Chipping Sparrow, but larger, wing bars more conspicuous, little or no black and white on forehead, rather more rufous on back, while the ashy collar is less conspicuous: beneath the ashy is tinged with reddish, especially on the sides, and there is a conspicuous dark brown spot in the middle of the breast. The base of the under mandible is distinctly orange.

DIMENSIONS. Length, 6.50; wing, 3.00; stretch, 9.50; tail, 1.60; bill, .45; tarsus, .85.

COMPARISONS. No other of our Sparrows have the red head combined with the light unstreaked under parts, with its single central spot.

NESTS AND EGGS. Nests placed in bushes, composed of mud and grass, lined with fine grasses and hair. They are rather shallow. Eggs, four or five in number, oval in form, greenish in color, rather finely spotted with reddish brown, thus resembling those of the Field Sparrow much more than they do those of the Chipping Sparrow.

GENERAL HABITS. The Tree Sparrow is a spring and autumn migrant in the northern portion of New England and a winter resident from Massachusetts southward as far as the Carolinas, none having been known to breed within our limits.

In autumn and spring the Tree Sparrows frequent shrubbery along fence rows or low bushes on the borders of woodlands, but in winter they are found in thick evergreen woods

or in low swamps where the undergrowth is thick. When with us they associate in flocks often in company with the Snow Birds. On pleasant days the Tree Sparrows are found feeding on the ground or moving rather leisurely through low bushes, but in stormy weather or at night they retreat to evergreen trees for protection against the cold.

SONG. In autumn, and sometimes during warm days in winter, the Tree Sparrows have a low warbling song which when given by a number together and heard at a little distance, produces a confused murmur. In spring, late in March or in early April, they emit a loud, clear song which begins with two high notes, then falls to a few other lower tones and ends with a low but exceedingly sweet warble. Even this fine chant may not be the true breeding song.

Field Sparrow.

SPIZELLA PUSILLA.

Plate II, Fig. 2.

About the size of the Chipping Sparrow, but redder above, the color of the back being nearly uniform with that of the crown which is several shades paler than the crown of the Chipping Sparrow. Beneath the color is buffy especially on the breast. There is no spot here, however, as in the Tree Sparrow, nor is there any black on the side of the head as in the Chipping Sparrow. The bill is of a decided reddish brown, and the feet are pale reddish brown.

DIMENSION. Length, 5.90 ; stretch, 8.15 ; wing, 2.55 ; tail, 2.45 ; bill, .38 ; tarsus, .73.

COMPARISONS. This is decidedly the reddest of all of our Sparrows which are unstreaked below, this rufous tinte ven



pervading the bill and feet. It may be further distinguished by the slender form.

NESTS AND EGGS. Nests usually placed in low bushes, often in a savin or small cedar, but occasionally on the ground. They are deeply cup-shaped, about three inches and a half in diameter, are composed of grasses and weeds somewhat loosely arranged, lined with fine grass and horse hair. Eggs, four or five in number rather elliptical in form, bluish white in color, rather finely spotted over the entire surface with reddish brown and lilac. Dimensions .65 by .52.

GENERAL HABITS. The Field Sparrow comes to us from the Southern States where they spend the winter, from the middle to the last of April, and frequent the barren hillsides which are grown up to savins and cedars. The males may be found in such places perched on the topmost bough of some tall cedar singing, but they are shy for Sparrows, and must be approached with caution, for if they think the observer is becoming too familiar, they will instantly dive into the recesses of the nearest savin. Then if dislodged from this retreat, they will quickly dart into a more distant cover, moving with a rapid eccentric flight. In autumn they leave their summer homes, and associate with other Sparrows in the cultivated fields. This species does not pass north of the White Mountains.

SONG. The lay of the Field Sparrow is to my ear, one of the sweetest of all bird notes. It consists of eight or ten notes which begin low, gradually grow louder, then become softer, when a series of quite distinct chirps are given and the performance ends abruptly. The entire song is given with a peculiar intonation that accords perfectly with the wilderness of

the barren New England hill sides which the bird inhabits, and has much to do with its singularly pleasing effect.

GENUS. ZONE-THROATED SPARROWS. ZONOTRACHIA.

Bill, rather pointed. Wings, longer than the tail which is slightly forked, but with the outer feathers rounded. This genus embraces two of our largest and finest sparrows, both have the top of the head conspicuously marked with black and white. Females somewhat duller than the males.

White-throated Sparrow.

ZONOTRACHIA ALBICOLLIS.

Plate III, Fig. 1.

Reddish brown or chestnut above, conspicuously streaked with dark brown. Top of head dark brown, with a central stripe of white. Line in front of eye bright yellow, continued over eye and back of it with white. Throat white, sides of head, breast, sides and undertail coverts, ashy brown; remaining under parts white. Edge of wing yellow. Occasionally there is a dusky spot in the middle of the breast.

Young birds, and usually females, have the yellow line on the sides of head less extended, and the black and white of the crown obscured with chestnut, and the white of the throat is more or less obscured with dusky. Young of the year in autumn have the markings of the crown wholly obscured by dusky, chestnut and pale rufous. There are black lines at the base of the lower mandible, and the breast is streaked with dusky. Nestlings differ from the above in being finely

PLATE III.



FIG. 1. White-throated Sparrow



FIG. 2. White-crowned Sparrow.

streaked with dusky below everywhere, excepting on the abdomen, and the white markings are obscured with yellowish.

DIMENSIONS. Length, 6.35; stretch, 9.55; wing, 3.05; tail, 2.85; bill, .48; tarsus, .90.

COMPARISONS. Readily known in the adult stage by the large size, black, white and yellow markings on the head, for no other of our Sparrows have the head thus ornamented.

NESTS AND EGGS. Nests placed on the ground, usually in some open spot, frequently by the roadside, they are saucer-shaped, composed of dried grasses and fine roots, somewhat compactly woven together and the structure is lined with horse hair and fine grass. Eggs usually four, or more rarely five in number, varying from oval to elliptical in form, bluish white in color, spotted, blotched and dotted, usually quite coarsely, with reddish brown, umber and lilac, these markings usually being distributed quite regularly over the entire surface of the eggs.

GENERAL HABITS. This beautiful Sparrow is a spring and autumnal migrant from Massachusetts southward, and a summer resident in the more northern portions of New England, wintering from the Middle States to Florida. When migrating they frequent the shrubbery on the sunny sides of fences and walls, also along the borders of woodlands. At this time they utter a sharp chirp of alarm when disturbed. They arrive in Massachusetts the last week in April, and move leisurely northward, to their breeding ground, then begin their journey in autumn, about September lingering in Massachusetts frequently as late as the last week in October.

SONG. Often in the early days of May in Massachusetts, we hear the first notes of the White-throated Sparrow, but it is very seldom that the fine melodious song which has rendered this bird so famous throughout New England, is given here at length. To fully appreciate their musical efforts one must visit the evergreen forests of the north, where in the early mornings of June, when the purple mist hangs over the mountains, where the delicate ferns, which wave beside the brooks are sparkling with dew drops, when the freshly grown leaves of the overhanging foliage are showing their loveliest green, the melodious strains of the White-throated Sparrows may be heard to perfection. This lay consists of several sweet prolonged whistles, and is somewhat plaintive, but very pleasing. Not only do our little musicians perform through the cooler hours of the morning, but the sultry noon-time also finds them singing. They are more silent when the sun declines toward the west, but begin again in the cool of evening. Thus they are almost untiring in their efforts through the day and, as if not satisfied, will frequently burst into full song during the night. But when the rocky mountain tops are gleaming in the brilliant moon-light and the silvery beams are finding their way through the openings in the shadowy forests, illuminating the little glades which form the homes of the Sparrows, they are especially musical. Then when all is silent, save the occasional melancholy notes of the Whip-poor-will or the distant hoot of some Owl, the effect produced by this incomparable song is surpassingly beautiful.

White-crowned Sparrow.

ZONOTRACHIA LEUCOPHYRS.

Plate III, Fig. 2.

Generally similar to the White-throated Sparrow, but differs in being much grayer above (dark reddish brown) in all stages of plumage, in the absence of yellow in front of the eye and on the edge of wing, and in having the throat not conspicuously white, but tinged with grayish.

YOUNG and nestlings, the former in obscured plumage, and the latter streaked beneath, may be distinguished from similar plumages in the White-throated Sparrow by the grayer tints.

DIMENSIONS. Length, 7.08; stretch 10.50; wing, 3.25, tail, 2.85; bill, .40; tarsus, .82.

COMPARISONS. Readily distinguished from all of our Sparrows by the very gray tints to the whole surface of the body and by the prominent stripes of black and white of the head.

NESTS AND EGGS. Nests placed on the ground in a clump of bushes, composed of grass and weeds, lined with fine grass. Eggs, usually four in number, oval in form, thickly spotted and dotted over the entire surface with reddish brown, often so thickly on the large end as to completely obscure the ground color.

GENERAL HABITS. The White-crowned Sparrow is a spring and fall migrant in New England, and although considered quite rare in Massachusetts, some may be seen every season. Like the White-throats, while migrating they frequent thick-

ets by the roadside, and along fence rows, where they may be at once distinguished by their very gray colors.

In spring they are to be found in Massachusetts in May, and again in October and possibly later, as I have found them at Albany, Maine, during the month mentioned. They breed quite north of New England, from Labrador northward, and winter in the Southern States.

SONG. Is quite unlike that of the White-throated Sparrow, being lively and clear, not unlike that of the Vesper Sparrow.

GENUS. PRAIRIE SPARROWS. CHONDESTES.

Bill, quite pointed. Wings, shorter than the tail which is rounded and conspicuously marked with white. See plate V. No streakings below in adult plumage. Sexes similar.

Lark Finch.

CHONDESTES GRAMMACUS.

Plate IV, Fig.1.

Yellowish brown above, streaked with dark brown. Top of head, reddish brown with a lighter central stripe which is white on the forehead then buff, line over eye buff, becoming white at base of bill. Spot below eye white, beneath which, is a black spot. Ear coverts, chestnut, encircled below and behind by white, beneath which is a black line. White, beneath, becoming yellowish brown on the sides, and with a distinct black spot on the breast. Wings and tail brown the former branded and edged with reddish and buff; the latter, tipped on all but central feather with white, but more broadly on the outer feathers, the outer web of outermost, being white at the base.



PLATE IV.



Fig. 1. Lark Finch



Fig. 2. *Thryothorus*

DIMENSIONS. Length, 6.50; Stretch, 10.95; wing, 2.95; tail, 2.85; bill, .55; tarsus, .72.

COMPARISONS. We have no other Sparrow in which the head markings are so complicated as in this species, the prominent chestnut buff and white markings will serve to distinguish the species, and these combined with the white under parts with the single spot on the breast, and the conspicuous white tippings to the tail render the species even more noticable.

NESTS AND EGGS. Nests placed on the ground, cup-shaped and composed of coarse grasses and lined with finer grasses. Eggs, four to six in number, rather round in form, white in color, marked with faint spots of lilac, lined and blotched with umber and brown. These lines are the most prominent, are irregular in width, and are arranged in a similar manner to those on the eggs of Orioles and Blackbirds, to which they bear a much closer resemblance than they do to those of other Sparrows and Finches.

GENERAL HABITS. The beautiful Lark Finch is, I am sorry to have to record, merely an accidental visitor to New England, for although apparently spreading slowly eastward, the species is, as a rule, confined to the region west of Ohio.

A specimen was taken at Gloucester in 1845, one at Newtonville, November 24, 1877, one at Magnolia, August 27, 1879, and one was seen at Framingham twice in April, 1883. These are the only New England records.

It appears to be abundant in the west, being a ground living species and a frequenter of hedge rows and thickets.

SONG. Its lay consists of a succession of clear liquid notes freely interspersed with trills, the whole forming a chant which is scarcely to be rivaled by any of our native songsters.

GENUS. SPARROWS. AMMODRAMUS.

Bill, slender, not thick, nor swollen at base. Upper mandible somewhat curved. Wings, longer than the tail, which is considerably rounded and with the feathers sharpened at their tips. These are quite slender Sparrows, which inhabit the grassy salt marshes of our coast. The sexes are similar.

Sharp-tailed Sparrow.

AMMODRAMUS CAUDICUTUS.

Plate IV, Fig. 2.

General color deep buff. Top of head yellowish brown, with a central stripe of ashy. Back, streaked with yellowish brown. Wings and tail brown, with the feathers edged with buffy. Edge of wing yellow. The buff below is darkest across breast and on sides, where it is streaked with brown. Remaining lower parts, white. Young birds and nestlings, aside from being more buffy do not differ greatly from adults.

DIMENSIONS. Length, 5.50; stretch, 7.70; wing, 2.55; tail, 1.77; bill, .47; tarsus, .77.

COMPARISONS. This is without doubt the most buffy of all of our Sparrows, no other species having this peculiar coloration anywhere near as extended, excepting the Yellow-wing and Henslow's which are, however, shorter, thicker birds with the back marked with reddish. The slender form and bill and pointed tail feathers will also serve to distinguish this species. For comparisons with the two following sub-species see descriptions of these.

NESTS AND EGGS. Nests placed on the ground in salt marshes. They are composed of grass, somewhat loosely arranged and are lined with fine grasses. They are usually placed in concealment under the dried, overhanging grass of the previous year, and the birds frequently gain access to them through tunnels, two or three feet in length. Eggs, four or five in number, rather elliptical in form, pale blue in color, marked profusely over the entire surface with fine dots and spots of reddish brown. Dimensions, .76 by .56.

GENERAL HABITS. The Sharp-tailed Sparrows occur on many of our salt marshes in spring and fall as far north at least as Rye Beach, New Hampshire, finding shelter among the tall sedges which border the creeks, but in summer they gather in the more boggy portions that are covered with a short, wiry grass, which as it grows very thickly, accumulates year after year, until a perfect mat is formed in which the birds place their nests.

The eggs are laid from the first week in June until the middle of July, each individual female probably depositing two sets, and the young may be found with their parents in August, at which time all may be seen running about on the mud of the creeks in search of small mollusks, or other aquatic animals left by the falling tide, but when the creeks are full, they may be seen perched on the tops of the tall sedges.

All of the Fringilline birds are more or less agile, but none of them move more quickly on the ground than members of this genus. The Sharp-tailed Sparrows are particularly noticable in this respect, as they are perfect acrobats among birds when among the sedge, now clinging to a slender sway-

ing top which scarcely bears their weight, then hanging head downward in order to reach some insect, after which they will drop to the ground and make their way with surprising rapidity to some other point. When surprised they will rise a short distance above the grass, fly a few yards, and then dart into some place of concealment from which it is difficult to make them rise a second time.

The Sharp-tailed Sparrows arrive from the South late in April and remain until about the middle of October, when they retreat southward and enter the marshes of the Carolinas and Georgia, where they are exceedingly abundant all winter.

SONG. During the breeding season, the males give what is certainly the feeblest approach to a song that any of the family attempt. This is given when the bird is hovering in air a few feet over the surface of the ground, and is so low as to be indistinguishable when the wind is blowing, even if the bird be only twenty yards away; but on still days a sputtering, husky warble may be heard, which continues a moment only, then at its termination the bird drops as if shot into the grass and does not rise again to repeat this rude lay until after a considerable interval.

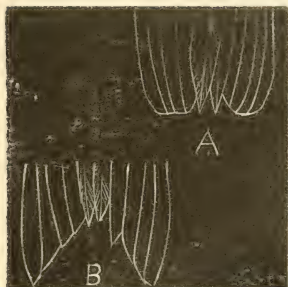
Nelson's Sharp-tailed Sparrow.

AMMODRAMUS CAUDICUTUS NELSONI.

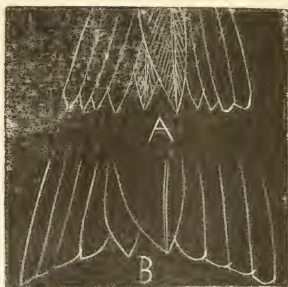
Similar to the Sharp-tailed Sparrow, but differs in being smaller, with a shorter, more slender bill, with the colors brighter and more varied. The buff of the head and other parts deeper. The light edges of the back feathers are lighter and the stripes beneath are finer and less numerous.

PLATE V.

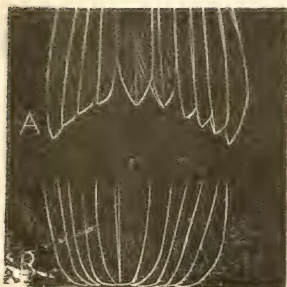
Outline of end of tails



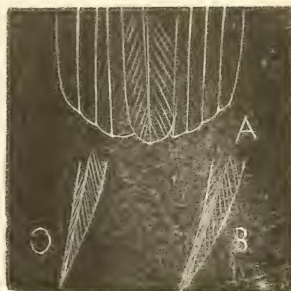
A, Black-throated Bunting.
B, Chipping Sparrow.



A, Ipswich Sparrow.
B, Snow Bunting.



A, Red Crossbill,
B, Fox Sparrow.



A, White crowned,
B, Yellow wing, C, Sharp-tailed
Sparrow.

GENERAL HABITS. The summer home of this sub-species is in the interior of North America, but it is a rather regular autumnal visitor with us, arriving about the first of October and remaining until about the middle of the month. They do not appear to differ in habit from the Sharp-tailed Sparrow. It has not yet been found in New England in spring.

Acadian Sharp-tailed Sparrow.

AMMODRAMUS CAUDICUTUS ACADICUS.

Intermediate in size between the Sharp-tailed and Nelson's Sparrow; somewhat similar to the former above in coloration, but paler and grayer. Beneath, the markings are few as in Nelson's Sparrow, but are broader and paler.

GENERAL HABITS This sub-species is a common migrant along the salt marshes of our coast during the last week in May and the first week in June, and from the first week of September, to the first week in November.

Its summer home is the sea borders of the British Provinces south of the mouth of the St. Lawrence. In habit, while migrating, these birds cannot be distinguished from the Sharp-tailed Sparrow.

Sea-side Sparrow.

AMMODRAMUS MARITIMUS.

Plate VI, Fig. 1.

Larger than the Sharp-tailed Sparrow, and not at all buffy, but very gray.

On the top of the head are two stripes of olive brown. Stripe at base of bill yellow, but this becomes white over the eye.

There is a dusky spot back of the ear coverts. Back, streaked somewhat broadly with brown, wings and tail brown, with the feathers edged with ashy brown. Edge of wing, yellow. Beneath, ashy white, with a darker ashy band across the breast and ashy along the sides, both streaked with darker.

Young birds are more or less buffy below, but with broad gray stripes.

DIMENSIONS. Length, 5.50; stretch, 8.25; wing, 2.50; tail, 2.10; bill, .60; tarsus, .80.

COMPARISONS. This is the grayest of all of our New England Sparrows, and is thus easily distinguishable. It is also larger and stouter than the Sharp-tailed Sparrow.

NESTS AND EGGS. Nests, placed on the ground or near it in the grass. They are gourd-shaped, with a contracted entrance on top; partly covered, having the entrance on one side, or cup-shaped and open. Eggs, four, five, or even six in number, rather elliptical in form, dull white in color, spotted and dotted quite finely with reddish-brown and sepia. Dimensions, .80 by .58.

GENERAL HABITS. This is an abundant summer resident of the salt marshes of southern Connecticut, and a few stragglers have been found in Massachusetts. In the winter they congregate in vast numbers in the marshes of the Carolinas and Georgia. Here every square acre holds its thousands, and every mile its hundreds of thousands, if not millions, of these little gray birds. At first one is not aware that there are so many, for they remain concealed most of the time but during the highest tides, they are forced to retreat before the advancing flood until they are obliged to perch upon the tops of the swaying grass, where they crouch, patiently await-

PLATE VI.



Fig. 1. Sea-side Sparrow.



Fig. 2. Yellow-winged Sparrow.

ing the subsiding of the waters, when they again seek their fastnesses and run about on the mud in search of small mollusks and aquatic insects which form their principal food.

SONG. Both the Sharp-tailed and Sea-side Sparrows utter a sharp chirp of alarm in winter and the present species utters a low twittering song when hovering in air a few feet above the grass. This lay is louder and more musical than that given by the Sharp-tailed Sparrow.

GENUS. YELLOW-SHOULDERED SPARROWS.

COTURNICULUS.

Bill, short and thick, considerably swollen at the base. Upper mandible but little curved. Wings, much longer than the tail which is a little rounded and with the feathers sharpened terminally. Colors, light buffy and white below, reddish and buff above, or greenish and buff. Edge of wing, yellow. No prominent white markings on the tail. Sexes similar. We have two species.

Yellow-winged Sparrow.

COTURNICULUS PASSERINUS.

Plate VI, Fig. 2.

Form stout. General coloration buffy; beneath, unstreaked (in adults) and reddish above. Top of head brown, with a central stripe of buff. Back ashy, streaked with reddish and brown, the former color predominating. Wings and tail brown edged with whitish and reddish buff. Line from bill to back of eye, orange, when it becomes buff. Sides of head, throat, breast and sides buff. Remainder of under parts white, tinged

with buff. Bill and feet pale brown. Edge of wing gamboge.

YOUNG. Similar to the adult, but more reddish above, and the tail shows indications of dark brown bars, and there are dusky streakings on the sides. Nestlings show no traces of chestnut nor reddish above; there are indications of whitish wing bars, and the edge of wing is only tinged with yellow; there is but little buff below, but the throat, breast and sides are streaked with dark brown.

DIMENSIONS. Length, 5.15; stretch, 8.00; wing, 2.50; tail, 1.70; bill, .56; tarsus, .72.

COMPARISONS. Easily distinguished from Henslow's Sparrow by the absence of streaks beneath in the adult stage, and by the slender form and large size in the nestling stage, and from all other Sparrows by the buff under surface and reddish markings above.

NESTS AND EGGS. Nests placed on the ground, composed of grass loosely arranged into a saucer-shaped structure, lined with fine grasses. Eggs four or five in number, rather oval in form, white in color, spotted and blotched with reddish brown and lilac, rather more thickly on the larger end. Dimensions, .78 by .60.

GENERAL HABITS. The Yellow-winged Sparrow is an abundant summer resident in Connecticut, on Nantucket and about Springfield, Massachusetts, and is locally common in Eastern Massachusetts, occurring here in dry sandy regions, thus they are fairly common about Wayland and Sudbury and in some places in Dedham.

The Yellow-wings are true ground loving Sparrows, and are seldom found far out of the grass. They run nimbly about on the ground, but can be readily recognized by the stout form and general light tints. They winter in the Southern States.

SONG. The lay of the Yellow-winged Sparrow is given when the birds are perched on some slight elevation, often a small shrub only a few feet from the ground, or at best a fence post, while the ruffled feathers, bowed head, and wide-spread tail indicates that they are doing their utmost to bring forth a melodious carol. In spite of all these vigorous efforts, however, the sounds produced are so low that they are quite inaudible a few rods distant, and more nearly resemble the stridulations of a grasshopper than the song of a bird. On account of this singular lay, the birds have recently been called Grasshopper Sparrows. The birds sing constantly during the breeding season, even sounding their uncouth song during the heat of noontime. In addition to these notes, they give a series of chattering, scolding sounds when annoyed.

Henslow's Sparrow.

COTURNICULUS HENSLOWI.

Plate VII, Fig. 1.

Form slender. Tail feathers very sharply pointed. General coloration greenish buff, streaked beneath. Head greenish buff, with two lines on top of head, and some lines on the back, line back of eye, and broken maxillary line, black. Back, dark brown, with the feathers edged with chestnut, which in turn are edged with whitish. Wings and tail brown, edged with greenish. Beneath, buffy white, tinged across breast and sides with greenish buff, and these parts are streaked with black. Bend of wing yellowish.

Nestlings are generally similar, but singularly, are without streakings.

DIMENSIONS. Length, 5.25 ; stretch, 7.12 ; wing, 2.17 ; tail, 2.15 ; bill, .48 ; tarsus, .70.

COMPARISONS. Distinguished at once by the slender form, greenish buff colors of the head and upper parts combined with the light, but streaked under parts.

NESTS AND EGGS. Nests placed on the ground, composed of grass and weeds and is lined with fine grass. Eggs four or five in number, oval in shape, white in color, rather sparingly spotted and blotched with reddish brown and lilac, the spots, being usually more numerous about the large end than elsewhere. Dimensions, .75 by .50.

GENERAL HABITS. Henslow's Sparrow is common as a summer resident in some portions of Eastern Massachusetts, notably at Tyngsboro ; it is also quite numerous in some portions of Worcester County and near Amherst ; also a few occur in Berkshire County.

It has also been found in north eastern Connecticut, at Webster, New Hampshire, and at Pownal, in southern Vermont. They winter in northern Florida. I have said that the Yellow-wings are ground loving Sparrows, and this is most emphatically true of Henslow's Sparrows. They are seldom seen at any great elevation above the surface ; even the males when singing, frequently do not emerge from the grass, and at best merely perch upon some low shrub or fence rail.

They are very expert in running through grass and weeds making their way among the herbage with nearly as much agility as do mice, and when started fly a few yards, their movements, being very rapid and eccentric. They arrive from the south early in May and depart late in October.



1811. *Chondestes*



Savannah Sparrow

SONG. The alarm note is not dissimilar to that of the Yellow-wing, being a sharp chirp. The song is, however, somewhat different, this is like the syllables "see wick," the first, being dwelt upon, the second, given quickly and both are uttered in a shrill, grasshopper-like tone and somewhat louder than the lay of the Yellow-wing.

GENUS. GRASS SPARROWS. PASSERCULUS.

Bill, rather pointed, proportionately smaller than in the last genus. Wings longer than the slightly forked tail. Tertiaries, longer than the secondaries. Both of our species have a yellow line over the eyes and are streaked below. Sexes similar. No prominent white markings on the tail. Edge of wings white.

Savannah Sparrow.

PASSERCULUS SAVANNA.

Plate VII, Fig. 2.

Rather short, but not very stout in form. Central tail feathers not very pointed. Tertiaries nearly as long as the primaries. General coloration, brown above, streaked with lighter. White beneath, streaked with brown. There is a yellow line over the eye which becomes whiter below the eye, and which runs down the neck. Top of head with a medium stripe of buffy and the streakings on the back are buffy, and reddish. The white beneath is tinged with buffy on breast and sides, and the dark brown streakings are edged with reddish. Edge of wing white. The streakings sometimes form a central spot on the breast.

Young and winter birds show little yellow over the eye, and the colors above are more rufous. Nestlings have no indications whatever of the yellow line over the eye, and are slightly tinged with yellowish below, where they are more finely streaked.

DIMENSIONS. Length, 5.75; stretch, 9.45; wing, 2.75; tail, 1.90; bill, .45; tarsus, .82.

COMPARISONS. This is, excepting the following species, the only decidedly brown Sparrow, streaked below, within our limits which has yellow over the eye, this being readily distinguishable at a considerable distance. From the closely allied Ipswich Sparrow, this is known by the smaller size darker colors, while the central tail feathers are not especially pointed.

NESTS AND EGGS. Nests placed on the ground in open fields and marshes or on sand-hills of the coast, composed of coarse grass loosely arranged into a shallow cup-shaped structure, lined with grasses. They are about three and a half inches in diameter. Eggs, four or five in number, oval in form, bluish white in color, thickly blotched, and some portions nearly covered, with reddish brown. Occasionally, there are distinct marks of umber, and more rarely lines of the same color. Dimensions, .85 by .62.

GENERAL HABITS. The Savannah Sparrows are also ground loving species, but not to so great a degree as are the Yellow-winged and Henslow's, for it is not unusual to find them perched in bushes or even in trees. This is especially true when the birds are migrating. Although common all over New England wherever the land is cultivated, they are rather more abundant on the sea shore, especially during the breeding

season and in spring and autumn fairly swarm on the marshes of the coast, being common at least as far north as the Magdalen Islands in the Gulf of St. Lawrence.

In spring they may be found in hedges and thickets in the neighborhood of grassy fields, and in autumn congregate with other Sparrows in weedy places in great numbers. They winter throughout the southern States and a few occur on the Bahamas.

They arrive from the south about the middle of April, lay one litter of eggs in June, and a second in July, at least in Massachusetts, but on the Magdalen Islands probably one only is deposited. They migrate southward with other Sparrows early in November.

SONG. In musical powers the Savannah Sparrows are somewhat superior to the Yellow-wings and Henslow's, yet the song resembles that of the Yellow-wing. It begins with a rather drawly "chip chir" then comes a grasshopper-like series of "chees" and the lay terminates with a rather musical warble.

Ipswich Sparrow.

PASSERCULUS PRINCEPS.

Plate VIII, Fig. 1.

Larger than the Savannah Sparrow and much paler in color above, the light tintings predominating. Below, the streakings are pale reddish brown, not dark brown as in the Savannah. The tertiaries are not as long, and the tail feathers, especially the two central, are sharper. Yellow over the eye as in the Savannah.

DIMENSIONS. Length, 6.25; stretch, 11.00; wing, 3.28; tail, 2.50; bill, .48; tarsus, .95.

COMPARISONS. This is the palest of all our Sparrows without exception, and these very light tints, combined with the yellow over the eye, will serve to distinguish the bird in spring, while in autumn, the pale tints above will be sufficient. In general coloration above this Sparrow resembles the Vesper Sparrow, but differs in the absence of any white on the tail, while beneath, the Vesper Sparrow has more distinct spottings, but they are not as numerous as in the Ipswich Sparrow.

NESTS AND EGGS. Nests placed on the ground and are quite similar to those of the Savannah, while the eggs are also similar, but are larger on the average.

GENERAL HABITS. This is chiefly a migrant along our New England coast, a few occurring as early as the middle of October, but the main flight does not reach us until the last week of the month and then the birds continue common until about the middle of November. A few remain north of Boston as late as the first week in December, and some spend the winter on Cape Cod, but by far the greater number pass the cold season on Long Island, the coast of New Jersey, and on Cobb's Island, off the coast of Virginia, while two specimens have been taken in Georgia.

They breed on Sable Island only, and while with us, frequent the sea coast, usually living in the beach grass on the sand-hills which skirt the shore. I once obtained a specimen in April 4th, 1874, at Ipswich, Massachusetts, which was perched on an apple tree about a mile inland, this, and

one taken later at Fresh Pond, Cambridge, are the only specimens which I have ever known to be found off the sandhills.

The Ipswich Sparrows, behave much as do the Savannahs, but are rather more shy while with us, rising at a longer distance away, and moving with a rapid zig-zag flight, will soon dart into the nearest cover.

The first specimen of this Sparrow was obtained on December 4th, 1868, at Ipswich. At that time it was extremely rare, but has since grown gradually more and more common until it has become a fairly abundant species. Such being the facts regarding the history of this fine Sparrow, I do not hesitate to affirm that I am thoroughly convinced that it offers a practical example of the evolution of a species almost, if not quite, within our time, its ancestor being the common Savannah Sparrow, some form of which, (and this species appears to be quite plastic) wandering to Sable Island, became through adaptation to changed environment, gradually transformed, with successive generations, to the present Ipswich Sparrow.

SONG. The alarm note of this species does not differ from that of the Savannah, but I have never heard the song, and doubt if it ever sings off its breeding ground.

GENUS. BAY-WINGED SPARROWS. POOCAETES.

Bill and general form much as in the last genus, the tertiaries are longer than the secondaries, but the wings and tail are proportionately longer, while the feet are much smaller. The shoulders are distinctly marked with bay (reddish brown), and there are prominent white markings on the outer tail

feathers. There are no distinct wing bars. We have one species only.

Vesper Sparrow.

POOCAETES GRAMINEUS.

Plate VIII, Fig. 2.

General coloration, buffy gray, with the outer tail feathers distinctly marked with white. Above, buffy gray, thickly streaked with dark brown. There is a whitish line over the eye. Beneath, whitish, tinged with buff, rather sparingly marked across breast and sides with quite narrow brown lines. The outer webs of the two outer tail feathers are usually white and there is a large spot on the inner webs of these and a smaller one on the next two. Shoulders, reddish brown. Young, are more yellow above and below, and the white of the tail is confined to the three outer feathers and the reddish of shoulders is streaked with gray. Nestlings are finely streaked with dusky everywhere excepting, on the abdomen.

DIMENSIONS. Length, 6.29; stretch, 10.64; wing, 3.22; tail, 2.42; bill, .85; tarsus, .55.

COMPARISONS. We have no other Sparrow which is streaked above and below, that has the outer tail feathers marked with white. This is very apparent as the bird flies, especially if it be moving away from the observer.

NESTS AND EGGS. Nests placed in a depression on the ground. They are very slight structures, composed of dried grass loosely arranged and are about three inches in diameter. Eggs, four or five in number, oval in form, ashy white in



Passer domesticus



Passer domesticus

color, spotted, blotched. and lined with black, brown, and umber. The lines are irregular in form, and are always present, but the number varies from one or two to several. These, and the ashy white color will serve to distinguish the eggs of this species from all others. Dimensions, .75 by .58.

GENERAL HABITS. The Vesper Sparrows are among the earliest arrivals from the south, often being found by the middle of March, when the snow still lingers in the valleys and woodlands. They scatter all over New England, breeding in grassy fields, but are particularly fond of pastures or fields in which grain has been cut the previous year, and the female will frequently build her nest there, often choosing an open spot which is quite destitute of herbage, evidently, trusting to her color, which is quite like that of the surrounding dried earth for concealment. When disturbed, the female runs from the nest, spreads her wings and feigns lameness. I have frequently seen dogs and even children, completely deceived by this ruse and instead of looking for the nest give chase, while the bird, after succeeding in inducing them to follow her for some distance from the nest, would rise and fly away.

The first litter of eggs is deposited early in May and a second is laid late in June. In autumn, the birds congregate with other Sparrows in weedy fields, and although a greater portion pass south of our limits, some stragglers remain with us all winter, even as far north as Massachusetts.

SONG. The lay of the Vesper Sparrow is quite pleasing and is given as the bird perches in some elevated situation. It begins with a warbling chant and ends with a few detached notes.

GENUS. LONGSPURS. CALCARIUS.

Bill, slender, longer than high at base. Upper mandible slightly curved. Wings long and pointed, but not reaching beyond the middle of the tail when folded. Tail, rather deeply, forked. Hind toe nail longer than its toe. Colors, black, brown, white and buff. We have one species as a common migrant and one straggler. (See Appendix).

Lapland Longspur.

CALCARIUS LAPPONICUS.

Plate X, Fig. 1.

Rather slender birds with quite long pointed wings, black throats and breasts, with prominent white spots on the two outer tail feathers. Above, dark brown, with the feathers edged with buffy and chestnut. There is a distinct chestnut collar on the back of neck. Beneath, buffy white, with throat back and spots on sides black (in winter this is somewhat obscured with whitish). Sides tinged with reddish. Bill, deep red; feet black. The female is duller, and often lacks entirely the black throat and breast, this being replaced by buffy, and the chestnut collar is also replaced by buffy.

DIMENSIONS. Length, 6.10; stretch, 10.55; wing, 3.35; tail, 2.50; bill, .45; tarsus, .85.

COMPARISONS. We have no other member of the family which combines the black throat and breast with the white markings on the tail, as seen in the adult male of this species. Females may be recognized by the long, pointed wings and white on the tail.

NESTS AND EGGS. Nests, placed on the ground, composed of coarse grass and weeds, arranged in a shallow cup-like form and often lined with feathers. Eggs, four or five in number, oval in form, greenish in color, spotted and blotched, often so thickly as to nearly obscure the ground color, with reddish brown, sometimes occasionally some specimens will be marked with zig-zag lines of dark brown. The thick, coarse markings are characteristic. Dimensions, .65 by .90.

GENERAL HABITS. As a rule the Lapland Longspurs are late autumnal migrants in New England, making their appearance in Massachusetts about the first of November, generally with the Shore Larks, but some specimens arrive earlier, and are then unaccompanied by other species. I once obtained a single straggler at Ipswich in April. They frequent the barren, wind-swept hills of the coast, where they may be found in company with the Shore Larks, running nimbly about on the ground or searching for food along the shore.

Their stay with us is short, however, for by the first of December they are off for the interior of the country where they remain a comparatively short time, for by the first of March they begin their journey northward, reaching their breeding ground in the Arctic Regions in May.

Thus in the Lapland Longspur we find an example of a species, many of which perform circulatory migration, first southward and eastward, then westward, then northward. The eggs are laid late in May or June.

SONG. All the sounds given by the Lapland Longspur when with us is a sharp chirp of alarm. But in its summer home, in the Arctic Regions, it has a fine song. This lay is given

as the bird flies upward from the ground to the height of ten or fifteen yards, then it raises its wings and drops slowly to the ground, uttering a tinkling, jingling melody which recalls somewhat the rollicking song of the Bobolink.

GENUS. SNOW BUNTINGS PLECTROPHENAX.

Bill, a little longer than high at base. Wings, long and pointed, reaching when closed beyond the middle of the tail, which is slightly rounded and a little emarginate. Hind toe nail long as in the last genus. Colors in summer black and white, somewhat obscured with reddish in winter. We have a single species.

Snow Bunting.

PLECTROPHENAX NIVALIS.

Plate IX, Fig. 1.

Rather plump birds, with long, pointed wings. Colors, mainly black and white. Adult in summer, white, with back, tertiaries, outer central tail feathers and spots on outer webs of the others, black. Female, similar, but with the colors obscured with rusty and whitish. In winter the black is obscured with whitish and rusty, and the white above with rusty, and there is a more or less distinct collar of rusty on neck in front. Bill, yellow: feet black.

Young birds are even more obscured with whitish and rusty, there being a rusty collar on the neck in front, and the rusty extends along the sides. Females are smaller, but similar in coloration.



FIG. 1. Snow Bunting.



FIG. 2. Snow Bunting.

DIMENSIONS. Length, 6.65; stretch, 12.50; wing, 4.25; tail, 2.60; bill, 2.40; tarsus, .75.

COMPARISONS. This is the whitest of all members of the Family which occur with us and may be readily distinguished by this and the black markings.

NESTS AND EGGS. Nests placed on the ground, composed of grass lined with feathers. Eggs four or five in number, oval in form, ashy white in color when faded, but pinkish when fresh, spotted and blotched with yellowish rufous, usually more thickly on the larger end. Dimensions, .62 by .90.

GENERAL HABITS. With the coming of the winter winds and snow these Buntings appear in huge flocks. With us here in Massachusetts, they frequent the coast rather than the interior, but during long, severe easterly storms, they are forced to retreat into the interior. They are nervous, active birds, running about on the snow among the partly covered weeds, gathering a few seeds here and there, then some one among the flock will become startled at some real or fancied danger, and uttering a sharp chirp of alarm will rise followed by all its companions. The flock once on the wing will circle several times about the field, but will seldom alight again in the immediate vicinity. They remain with us sometimes as late as the first week in April, when they depart for their home in the Arctic Region.

SONG. When with us they have a loud, clear whistle and a kind of chirring sound which they utter when flying, but in their home, they give a very sweet warbling song which is emitted as the bird rises high in air, and at its termination drops to the ground.

GENUS. GOLDFINCHES SPINUS.

Small birds, less than seven inches long, with short, pointed bills, long pointed wings, longer than the rather deeply forked tails. One of our species is bright lemon yellow and black, and one is whitish streaked with brown.

American Goldfinch.

SPINUS TRISTIS.

Plate X, Fig. 2.

Adult in spring bright lemon yellow, with top of head, wings and tail, black. Wings with a band of white, and the secondaries edged with white, tail feathers also edged with white and there is a spot of white on the inner webs near tips. Bill red. Female greenish, with wings and tail brownish, and with the white markings restricted. No black on top of head. In winter the males are similar to the females, but the wings and tail are not so brown. Young similar to the female but tinged with smoky and rufous. Nestlings quite similar, and contrary to the rule in this family, are not streaked below.

DIMENSIONS. Length, 5.60; stretch, 9.05; wing, 2.85; tail, 1.85; bill, .48; tarsus, .45.

COMPARISONS. Readily known in summer dress by the yellow and black colors, and in winter by the small size, greenish color and forked tail.

NESTS AND EGGS. Nests placed in trees. They are compact structures, composed of fibrous weeds, leaves, and thistle down; sometimes common cotton or rags are used. They are usually smoothly lined with silvery white thistle down, when

they present a very pretty appearance, but they are sometimes lined with fine rootlets, horse hair or fern cotton. They measure about three inches in diameter. Eggs usually four, sometimes five, rarely six, in number, oval in form, pale bluish green in color, unspotted in all which I have seen.

GENERAL HABITS. The Goldfinch is a common resident throughout New England, being scarcely more common at one season than another, but as it moves about in large flocks in spring, autumn and winter, it is not as generally distributed during these seasons as in summer.

Few birds are better known than the Yellow-birds, as they are popularly called, when in their brilliant gold and black summer livery, at which time they are to be found feeding upon the seeds of thistles by roadsides when they are so unsuspecting as to allow of a quite near approach.

In winter, however, when in large flocks, at which time they feed upon weed seeds, they are much wilder.

The Goldfinch breeds late in the season, in July, when the newly ripened seeds of plants will furnish food for its young, which appear in August. The nest is sometimes placed in a willow or often in a maple or other ornamental tree by the road side.

There is a regular spring and autumnal migration of Goldfinches, at least throughout Eastern North America, but this fact does not appear to affect the numbers which occur in New England, for if the birds which are hatched with us push on south, their places are supplied by others from further north. During some seasons they migrate as far south as southern Florida.

The flight of the Goldfinch is undulating, and in winter they are rather nervous, active birds, seldom remaining long in one place.

SONG. The Goldfinch has a peculiar plaintive cry which it gives as it rises and falls in its undulating flight. It also has a longer call note often emitted as the bird sits on a tree to attract the attention of some passing companion. The males in summer also have a peculiar note which is louder and clearer than that given at other times, which is uttered as they fly about their nesting sites in huge circles. The true song is an exceedingly sweet, continuous warble and, as even in summer, the males are inclined to gather in flocks, the effect produced by a concert of their voices is very fine.

Pine Siskin.

SPINUS PINUS

Plate IX, Fig. 2.

Grayish white, streaked everywhere with dusky, excepting, on abdomen. Broadly above, where the dark color predominates and more narrowly below, where the light predominates.

Wings brown with base of the secondaries and some of the primaries pale sulphury yellow, thus forming a band across the wing. Bill brown. Tail brown, sulphur yellow at the base.

DIMENSIONS. Length, 5.25; stretch, 8.80; wing, 2.85; tail, 1.65; bill, .45; tarsus, .60.

COMPARISONS. Easily distinguished by the plain color, streaks above and below, forked tail and sulphury band across wing. The Red-poll is somewhat like this bird, but has a red crown, and white wing band.



[1111]



[1112] *Lepidopygia*

NESTS AND EGGS. Nests placed in trees. They are flat, bulky structures composed of stripes of bark and weed stalks, lined with down from willow catkins. Eggs, three or four in number, oval in form, bluish white in color, dotted very sparingly near the large end, with black and lilac and usually marked with with lines of the same colors.

GENERAL HABITS. The Pine Siskin is an irregular winter visitor as far south as Massachusetts, but is a constant resident in northern New England. It comes to us in large flocks during certain winters, its visit evidently being regulated by the food supply north of us, and even extending its migration at times as far south as southern Florida. When with us, it feeds largely upon seeds of the white birch, and also associates with the Goldfinches and Red-polls in the weed fields, in order to gather seeds there.

It has been known to breed twice in Massachusetts. Once, at Cambridge in early May, 1859. It also nests in June, and and sometimes as late as August, hence, we may suppose that its breeding time is, as in allied species, regulated by the ripening of the seeds of certain plants upon which it feeds its young.

SONG. The Pine Siskin has a note when flying, and a call when it wishes to attract the attention of its companions, which resembles quite closely the same sounds produced by the Goldfinch, but those given by the Pine Siskin, are harsher or more husky in tone, and the same is true of the song.

GENUS. RED-POLLS. ACANTHIS.

Bill, very short, sharply pointed, outline of upper mandible curved, straight, or even convex. Nostrils, concealed by nasal tufts. Wings long, folding beyond the middle of the rather deeply forked tail. Small birds streaked above and below with dusky, but with the dull colors relieved by crimson on the crown, rosy on the breast, and sometimes on the rump. We have three species and one sub-species.

Red-poll.

ACANTHIS LINARIA.

Plate XI, Fig. 2.

Small birds, ashy white, streaked broadly on back, and lined on rump, with dark brown. There is a dusky spot on the throat and streaks of the same color on the sides. Top of head crimson, rump and lower parts, excepting abdomen and under tail coverts, tinged with rosy. Wings brown, banded with whitish and with the feathers, margined with ashy. Tail, also brown, edged with ashy. Females and young, similar to the male, but lack the rosy tinting below and on the rump, but the top of head is always crimson. Nestlings are streaked above and below, and do not have the red on the crown.

DIMENSIONS. Length, 5.00; stretch, 8.60; wing, 2.75; tail, 2.35; bill, .38; tarsus, .32.

COMPARISONS. Distinguished from the closely allied Pine Siskin by the crimson on the crown. This and the general ashy gray colors, streaked with darker, will serve to separate it from all other species, excepting from other Red-polls, of which comparative descriptions are given.

NESTS AND EGGS. Nests placed in bushes, tufts of grass, or in cavities of trees or rocks, composed of twigs, grass, etc., lined with fine grasses, or cottony material from willows, and feathers. Eggs, four to six in number, oval in form, very pale, bluish green in color, spotted and dotted, usually about the large end, with yellowish brown. Dimensions, .52 by .95.

GENERAL HABITS. While it is quite probable that the Red-polls visit Massachusetts every winter it is also true that their numbers vary greatly with different years. Sometimes, a few only will be seen, and then again the whole country will be inundated with large flocks, and hundreds of specimens will be seen daily : at such times they range somewhat south of New England, occasionally reaching Washington and Kentucky.

They begin to arrive in November: and remain until April, in fact, I have on one occasion, seen them as late as the 25th of this month. When with us they feed mainly upon the seeds of weeds and frequently associate with Goldfinches and Pine Siskins. They probably breed early, as I have had young fully grown which were obtained on the Magdalen Islands in July. The habits of all of the species of the Red-polls, appear to be so similar, that a description of each would be superfluous. The present species has the most southern distribution in summer, breeding as above stated, on the Magdalen Islands in the Gulf of St. Lawrence.

SONG. Both call and alarm notes are quite similar to those given by the Pine Siskins, but are rather less harsh, being about intermediate between those of this species and those of the Goldfinch. The song which I have heard upon several

occasions in spring, here in Massachusetts, is a very sweet, continuous warble, not as lively as that of the Goldfinch, but more melodious and pleasing.

Holboell's Redpoll.

ACANTHIS LINARIA HOLBOELLII.

This well marked sub-species of the common Redpoll is larger, length, 6.00; wing, 3.00, but the form, outline of the bill, and color is similar.

Holboell's Redpoll is more northern in distribution, breeding far north, seldom even reaching the United States in its winter migrations, hence is very rare in Massachusetts.

Greater Redpoll.

ACANTHIS ROSTRATA.

Outline of upper mandible decidedly curved (see plate XI, Fig. 2, B). The size is large, at least 6.00 long, and the streakings are broader and heavier than in the Redpoll. The large bill, which is about the size of that of a Tree Sparrow, and darker, broader markings, are quite noticeable even at a distance. Rather more northern in distribution than the Redpoll, and although it does not visit the United States every winter, it is occasionally found in abundance even as far south as Massachusetts, especially on the coast.

Hoary Redpoll.

ACANTHIS EXILIPES.

Size, small, not exceeding 5.00; bill, very short, with the outline of the upper mandible decidedly convex (see plate XI, Fig. 2, A). The colors are much lighter than in the Redpoll,



Myiophobus cinerascens.



the dusky markings are narrower, and the rump is wholly white or rosy, without any streakings whatever. Breeds in the far north in about the same regions inhabited by Holboell's Redpoll, and is very rare as far north as Massachusetts in winter, but may be more common at this season in northern New England.

GENUS. CROSSBILLS. LOXIA.

Bill stout, both mandibles much curved, with the tips elongated and crossed. Wings, long and pointed, folding beyond the middle of the deeply forked tail, which has both upper and under coverts elongated and extending beyond its middle.

This is a unique genus of Finches of which we have two species within our limits.

American Crossbill.

LOXIA AMERICANA.

Plate XI, Fig. 1.

Form, robust. Yellowish red throughout, but never rosy. Wings and tail dark brown without markings. Female, greenish gray throughout, becoming bright on top of head and rump, where there is sometimes a trace of red. Young are like the females, but quite dull, and males occur in all stages of mixed red and greenish. Nestlings are ashy throughout, tinged with greenish, especially on the rump, streaked everywhere with dusky, but rather more narrowly below than above.

DIMENSIONS. Length, 6.00; stretch, 10.25; wing, 3.75; tail, 2.45; bill .78; tarsus, .65.

COMPARISONS. Readily known from the White-winged Crossbills by the absence of white bands on the wing, and from all other members of the family by the crossed bill.

NESTS AND EGGS. Nests, placed in trees, they are rather compact, composed of twigs and bark, lined with moss. Eggs, four or five in number, oval in form, pale bluish or greenish white in color, sparingly spotted and scrawled with lines of dark brown and lilac. Dimensions, .52 by .73.

GENERAL HABITS. The Red Crossbills, as related under Family characters, offer an example of a species which has not only lost the migrating instinct, but which has also lost that love of locality which is so strongly implanted in most other birds, and which induces them to return year after year to breed in the vicinity of the place where they were hatched. They are true nomads among birds, breeding in any locality which will offer them nesting sites, and at any time of year from February until August, when they can find sufficient food for their young. Thus they have been found nesting in Maine in February, in New York City in April, fully grown young have been found at Peterboro N. Y. in July, and at Newton in August, which, in both cases must have been hatched in June, and on Cape Cod in July, and at Tyngsboro, Massachusetts, in August, and in many other places at various times.

The chief food of the Red Crossbill in winter is the seeds of coniferous trees. and the supply of this food regulates the movements of the birds, which simply wander about in search of supplies, and thus occur as far south as Maryland, Virginia, and along the mountain ranges into Georgia, breeding wherever they occur.

The Crossbills are very expert in obtaining the seeds from cones, and it is an interesting sight to see a flock so engaged, as they assume various attitudes, often even hanging head downward, when they resemble little Parrots. All of the Finches and Sparrows are inclined to gather in flocks, but this propensity appears to be developed to an extreme degree in the American Crossbills, for they associate together in considerable numbers and often even breed in communities.

SONG. When feeding in company, the Crossbills keep up a murmuring conversation; they have a loud, clear call note which is often given when the birds are flying; and in spring they give a low but very sweet song.

White-winged Crossbill.

LOXIA LEUCOPTERA

Plate XII, Fig. 1.

Size about that of the American Crossbill but the bird is more slender and has a less stout bill. The color is crimson lake, not yellowish red, while the wings and tail are darker and there is a large, conspicuous patch of white on the former, and the inner feathers are tipped with white. Females, young and nestlings are colored much as in the American Crossbill, but the white on the wings is always present.

DIMENSIONS. Length, 6.25; stretch, 9.10; wing, 3.25; tail, 2.40; bill, .65; tarsus, .60.

COMPARISONS. Distinguished from the American Crossbill in all stages of plumage by the conspicuous white patch

on the wing, and from other members of the family, by the curved bill.

GENERAL HABITS. While in a general way, the White-winged Crossbills resemble the American, they differ in some important particulars, for example, they are not mere wanderers, but have fixed localities to which they return year after year to breed, and their movements are more like those of the other occasional winter visitors which come to us, being governed by the food supply. But on the other hand it cannot be doubted that they breed irregularly, for I have seen fully grown young taken in July which must have been hatched from eggs laid in May, and again I have found them about to breed on the Magdalens in July. The White-winged Crossbills do not appear to be quite so dependent upon the seeds of cones as do the Red, for I have found them eating the seeds of grasses and weeds. This food is occasionally varied by an insect diet, for I once obtained a specimen in Newtonville on June 13, that had its stomach filled with canker worms.

The most notable visit which we ever had of this species that I have known, was in the winter of 1868-69. That year they appeared in great numbers at Albany, Maine, as early as October 21st; during the first week in December they were common at Ipswich, Mass., then a few days later appeared in Newton, where they remained until late in April.

SONG. The call and other notes do not differ much from those of the American Crossbills, and the song is not dissimilar.



Fig. 1. White-wing Crossbill



Fig. 2. Purple Finch.

GENUS. ROSY FINCHES. CARPODACUS.

Bill, thick, somewhat swollen at base. Wings, pointed longer than the rather deeply forked tail. Head sub-crested. Size medium. Adult males are dull crimson lake, but the females are grayish. There are no prominent white markings on tail.

Purple Finch.

CARPODACUS PURPUREUS.

Plate XII, Fig. 2.

Size, about six inches long. Form, robust. Adult male, crimson lake, brighter on crown, streaked on the back with dusky; under wing and tail coverts and abdomen, white. Wing and tail brown, with the feathers edged with crimson lake.

Adult female, greenish brown above, streaked with dusky, and there is an indication of a whitish stripe over the eye. White beneath, streaked and spotted everywhere with brown. When caged, males become yellow. Young, of both sexes resemble the female, but are tinged with greenish above, and yellow below. Nestlings are similar, but are rather more finely streaked and overwashed everywhere with reddish yellow.

DIMENSIONS. Length, 5.59; stretch, 8.65; wing, 4.32; tail, 2.20; bill, .45; tarsus, .57.

COMPARISONS. Readily known in the adult male plumage by the small size, short, thick bill, and crimson lake color. Females may be known by the size and bill, as given, and by the whitish stripes over the eye, long wings and forked tail, for no other of this family has these proportions and size.

NESTS AND EGGS. Nests usually placed in evergreen trees, composed of small twigs and fine roots neatly woven together into a shallow cup-like structure which is lined with horse

hair and strips of fibrous bark from the cedar. The nest measures about four and a half inches in diameter. Eggs, four or five in number, oval in form, bluish green in color, spotted and dotted irregularly with black, lilac and sometimes with umber. The black markings occasionally form lines. The eggs closely resemble those of the Chipping Sparrow, but are larger. Dimensions, .85 by .55.

GENERAL HABITS. The Purple Finch is a common spring, summer, and autumn resident in New England and a few remain all winter as far north as Massachusetts, while large flocks are found throughout our limits all the year round. This irregularity in migrating is quite likely due to food supply.

When the elm trees are about to bloom, the Purple Finches feed upon the bursting buds and also upon the petals of the apple blossoms. In winter, they feed upon seeds and berries of the cedar. They eat but few insects even in summer, hence are but little benefit to the husbandman.

They breed in May, often placing their nests in cedars sometimes only a few feet from the ground, and I have known several to breed in adjacent trees, forming little communities. The males breed and sing when in the gray plumage, and it has been stated by some ornithologists that this gray plumage is a color phase, which once assumed is worn through life and that the crimson dress is often acquired immediately after the first or nestling plumage without any intermediate gray phase; but while these statements may be true, more evidence, is required to prove them. The Purple Finches occasionally wander as far south as Jacksonville, Florida.

SONG. The ordinary carol of the Purple Finch is a lively, rippling melody which is very pleasing. Contrary to the rule

among birds, the females sing this song as well as the males, but their lay is not given as loudly as that of the males, nor is it as fine.

The males have the habit of rising in air, usually in the vicinity of the nests, to a considerable height, then descending slowly with the wings held upward and singing loudly. Both sexes give a sharp chirp of alarm, and the males utter a clinking note when disturbed.

GENUS. PINE GROSBEAKS. PINICOLA.

Large birds, eight inches long. Bill, short and thick, with upper mandible curved, and extending beyond the lower.

Wings, long and pointed, longer than the quite deeply forked tail. Plumage, very thick. We have a single species of which the sexes are dissimilar when adult.

Pine Grosbeak.

PINICOLA ENUCLEATOR.

Plate XIII, Fig. 1.

Adult, male. Rusty red throughout, darkest on the back where the feathers show dark centers. Abdomen and under tail coverts, gray. Wing and tail blackish, the former showing two white bands, and some of the feathers are margined with white. Females and young, gray throughout, tinged on head, back, and rump and rather more slightly across breast with greenish yellow. Wings and tail as in the male. Young males show traces of red and all stages occur between this and the adult.

I have described above, the plumages as they are found to occur, but it may be possible that, like the Purple Finch, some males which are gray, never assume the red dress, but it appears evident, that this red plumage is acquired quite gradually, at least three years being required to perfect it. The male in the red plumage is usually not abundant.

DIMENSIONS. Length, 8.57 ; stretch, 13.70 ; wing, 4.60 ; tail, 3.85 ; bill, .55 ; tarsus, .75.

COMPARISONS. We have no other bird in New England, which is as large as this, which has the Grosbeak-like bill, white banded wings and deeply forked tail.

NESTS AND EGGS. Nests placed in trees, they are flat in form and composed of fine rootlets etc. and lined with finer material. Eggs, four in number, oval in form, greenish drab in color, spotted and blotched with dark purple and pale purplish brown. Dimensions, .75 by 1.08.

GENERAL HABITS. This is another winter visitor which comes to us from the north, and although we may have a few every winter, they are much more abundant during some winters than at others, their movements being governed by the food supply. They breed from the mountains of northern New England, northward.

When with us, they frequent pines and other evergreen trees, from the cones of which they are very expert in removing the seeds upon which they feed. I have, however, seen them eating weed seeds. They also eat cedar berries.

I know of no birds which visit thickly settled portions of the world which are so tame as the Pine Grosbeaks. Specimens which I have captured with a noose on the end of a piece of wire not over eighteen inches long, which I held in





my hand as I climbed into the trees in which the birds were feeding, have been so very fearless as to alight on my hand and shoulders, within an hour after I had brought them home.

This species, in common with the Snow Bunting and Lapland Longspur is found throughout the Arctic Region of both continents; with us, they arrive from north, in November, and often remain until April.

SONG. The call note of the Pine Grosbeak is the loudest, and clearest of any uttered by our winter birds, and is almost startling when heard near at hand, and can be distinguished a long distance away. The song is a rather low, continuous warble, and quite sweet, and is very frequently given with us in April.

GENUS. AMERICAN HAWFINCHES.

COCCOTHAUSTES.

Large birds, more than seven inches long. Bill, excessively thick, being nearly as high at base as long. Nostrils completely concealed by tufts of feathers. Wings, very long and pointed, folding beyond the middle of the rather forked tail. We have a single species.

Evening Grosbeak.

COCCOTHAUSTES VESPERTINA.

Plate XIII, Fig. 2.

Size, large with a very robust form and thick yellow bill. Adult male. General color of body greenish yellow, more or less obscured with dusky, especially on the anterior portions,

becoming quite black on the top of head, leaving forehead, excepting a narrow line at base of bill, clear yellow. Wings, sooty brown, with a patch of soiled white on tertiaries and inner secondaries. Upper tail coverts and tail, black. Female similar, but with the top of head brownish, and the yellow is obscured with ashy. Bill, greenish yellow.

DIMENSIONS. Length, 7.60; stretch, 13.50; wing, 4.45; tail, 2.60; bill, .75; tarsus, .70.

COMPARISONS. Readily known by the large size, heavy, yellow bill, and general yellowish colors.

GENERAL HABITS. This species appears to be confined during the breeding season to the region west of the Great Plains, but always wanders as far east in winter as Michigan, and casually in former years to New York. In 1890, however, large numbers came to us from the westward and inundated the whole of New England, excepting the more northern portions. They were first seen on January 1st, at North Sudbury, Massachusetts, and continued numerous through January, February, and during the first week in March, then their numbers began to abate, but some lingered through April, the last specimen observed being on May 1st at Heniker, New Hampshire.

The Evening Grosbeaks being such peculiar birds, naturally attracted considerable attention and many were taken. They occurred in small flocks, consisting of from four, five or six to a dozen individuals; sometimes larger numbers were observed, and then again solitary individuals and pairs were seen.

An influx of numbers of a species like the Evening Grosbeak which is, as a rule, not a migratory bird, into a section

like New England which is so far from its usual habitat, also so distant from the usual limit of its winter wanderings, presents an interesting problem. This movement eastward cannot be called migratory, as the term is generally applied to those birds which perform annual journeys from north to south, and from south to north, which are governed wholly by food supplies. It is highly probable that this and similar movements among birds and other animals, arise from the overproduction of a given species under peculiarly favorable conditions which have existed for a limited season. This overcrowding of a given section would, to be sure, in a measure, tend to exhaust the food supply of that section, and thus give rise to an impulse which would revive a nearly lost migratory instinct which was once possessed by at least all birds and possibly some mammals. The revival of this instinct causes the animal in which it is revived to wander from its birth-place, to which it may never return again: in which case the overcrowded district would be relieved. (For further remarks upon this interesting subject, see notes on Migration of Birds and other Animals, in Contributions to Science, Vol. III, page 45).

SONG. The Evening Grosbeak has a loud call note, which it utters quite frequently, and a short but not very pleasing warble.

The vocal organs are quite peculiar. These are figured on page 5. In regard to the sound producing membrane, we find that the tympaniform membranes, f, v, are considerably reduced in size and are vibratory only on the upper triangular portion, v, but that there is an additional vibrating space between the upper bronchial half ring, seen just above v, which

is governed by a Y-shaped muscle, seen at i, d, and at e, where it is greatly enlarged. For other peculiarities we find that although the bronchialis, and broncho trachealis are fused together in a great measure (see c and b) they are divided below the point of the insertion of the sterno-trachealis, ib. s. The transverse bone, a, is present, and although it supports a small semiluna membrane, it is so fixed that it cannot be oscillated. In order to understand these variations, fig. 6 should be compared with figs. 7 and 8 on page 7.

GENUS SNOW BIRDS. JUNCO.

Small birds, not over seven inches long. Slaty gray in color above, with the outer tail feathers conspicuously marked with white. Bill rather slender and pointed. Wings, a little longer than the slightly forked tail. We have one species, with sexes somewhat dissimilar, and no prominent wing bars.

Black Snow Bird.

JUNCO HYEMALIS.

Plate XIV, Fig. 1.

Dark slate throughout, excepting on lower breast, abdomen, greater portion of two pairs of outer tail feathers and a spot on the third pair, which are white. Bill, pinkish. Female, similar, but paler slate, which is more or less obscured by reddish. Winter birds and young are also quite strongly tinged with reddish. Nestlings are thickly streaked above and below with dusky.

DIMENSIONS. Length, 6.25; stretch, 9.80; wing, 3.00; tail, 2.60; bill, .42; tarsus, .75.

COMPARISONS. This is the only dark, unstreaked Sparrow which we have that is less than seven inches long, which has white tail feathers. The Vesper Sparrow has, but this is streaked both above and below.

NESTS AND EGGS. Nests, placed on the ground, are shallow, cup-like structures, composed of grasses, lined with finer. Eggs, four or five in number, oval in form, varying from white to bluish white in color, spotted with reddish brown and lilac.

GENERAL HABITS. The Snow Bird is an abundant spring and autumnal migrant throughout middle and southern New England, and a winter resident in Massachusetts and southward. It is a common summer resident on the mountains of western and central Massachusetts, and is found somewhat rarely in northern Worcester County, and is abundant throughout northern New England. Some migrate every season as far south as the Carolinas and often quite to Florida.

They are rather nervous, active birds, frequenting hedge rows and thickets along walls or fences in spring and autumn but in winter they prefer the shelter offered by the thick evergreen trees, into which they dart for concealment when disturbed. They are always easily recognized by the dark color and white tail feathers, which they are constantly displaying as they hop about on the ground or when flying.

SONG. The alarm note of the Snow Bird is a sharp chirp which is often repeated several times in rapid succession, until it becomes almost a twitter. When migrating in spring and sometimes in autumn, they give a low warbling song which is quite melodious, but in summer when breeding, the lay uttered as a regular song, is nothing better than a series of

harsh chirps run together so as to form a kind of trill which, although lively, is not very musical.

GENUS. SONG SPARROWS. MELOSPIZA.

Small birds, less than seven inches long, reddish brown above, streaked with dusky; lighter below, also streaked with brown (but obscurely in the Swamp Sparrow.) Bill, rather larger and stouter than in the last genus. Wings either shorter than the rounded tail, or equal to it, or but little exceeding it in length. Sexes, similar. We have three species.

Song Sparrow.

MELOSPIZA FASCIATA.

Plate XIV, Fig. 2.

Wings, shorter than the tail. Reddish brown above, streaked narrowly with ashy and more broadly with dark brown. White beneath, spotted on breast, where the spots accumulate to form a central patch, and streaked on sides with dark brown. There is a medium line on crown, and over eye one of ashy. Back of eye is a brown line, one below eye and a maxillary patch of the same color. Young, have the ashy markings overwashed with dusky and the lower parts are tinged with yellowish. Nestlings show no traces whatever of the ashy, but its place is supplied with reddish yellow, which also strongly tinges the entire lower parts, where the spots and streakings occupy the same area as in the adults, but the spots do not accumulate to form a central patch.

DIMENSIONS. Length, 6.38 ; stretch, 8.75 ; wing, 2.55 ; tail, 2.77 ; bill, .48 ; tarsus, .75.

COMPARISONS. Readily known by the decided reddish brown color above, combined with the spottings and streakings below on a white ground, together with the short wings and long tail. The White-throated Sparrow is about the same color above, but this is not streaked below and has longer wings. For comparisons with Lincoln's and Swamp Sparrows, see these species.

GENERAL HABITS. The Song Sparrow is a constant resident in New England from Massachusetts southward and a summer visitor to the sections further north. It is true, however, that in Massachusetts they are quite uncommon in winter, but some remain wherever they can find such shelter, as brush heaps and thickets along walls may afford them.

The Song Sparrows are among the first to breed of the smaller birds, nesting often by the middle of April. The first nest of the season is generally placed on the ground, but when a second litter of eggs is laid, which event occurs as soon as the young of the first brood are fully grown, the nest is often placed in a bush. The reason for this change is obvious, for while the ground affords a warmer situation for the first nest, which is built during the somewhat uncertain weather of our middle spring, it is also a better place for concealment. As soon as the weather becomes warmer, the second nest is placed above the ground in some thicket or bush where it is not as easily seen by animals which are ever ready to prey upon the eggs or young. A third litter of eggs is often deposited by the same pair of birds in a single season, even when they have succeeded in rearing two other broods of young.

Early in spring the Song Sparrows may be found along fence rows and in thickets. They also occur in bushes on the side of streams. They are not shy birds, and when started from one retreat, merely fly a sufficient distance to reach the nearest bush which will afford them partial concealment. In flying the tail is whisked from side to side, a movement which is quite characteristic of the species.

SONG. Early in March should a few warm days occur, the the lively, well known song of this Sparrow may be heard often in the vicinity of houses. It begins with two or three clear detached notes, runs into a warbling trill, and terminates with one or two separate notes, something like those given at the beginning. I know a few bird songs which, to my ear, are more pleasing, but possibly this may be largely due to pleasant associations connected with the chant of this Sparrow, which one hears so constantly, for none of our native birds continue to sing as long as this. As mentioned, they begin their songs amid the ice and snows of our lingering winter, continue through the spring and summer, for the sultry heat of August, during which most of our native birds are silent, finds them singing. Through the autumn their melodies may still be heard, and even on warm days in November, when the brown earth is covered with fallen leaves, our little plainly colored friends will break out into the same clearly given lay which they practised earlier in the season.

PLATE XIV.



Fig. 1. Black Snowbird.



Fig. 2. Song Sparrow.

Lincoln's Sparrow.

MELOSPIZA LINCOLNI.

Plate XV Fig. 1.

Differs from the Song Sparrow in being more yellowish ashy above and in having a broad band of buffy across breast which extends along the sides. The streakings below, are rather narrower than those of the Song Sparrow. There are two rufus bands on the crown. Young are darker buff below.

DIMENSIONS. Length, 5.45; stretch, 8.45; wing, 2.65; tail, 2.25; bill, .45; tarsus, .75.

COMPARISONS. Known from other Sparrows by its general resemblance to the Song Sparrow, combined with the buff on breast and sides.

NESTS AND EGGS. Nests placed on the ground, usually in swampy places, composed of leaves, grasses, etc., lined with finer material. Eggs, four or five in number, oval in form, pale green in color, thickly spotted and dotted with reddish brown. Dimensions, .76 by .57.

GENERAL HABITS. Lincoln's Sparrow is, when with us, a retiring bird, keeping well down among swampy thickets. It occurs regularly however, as a spring and autumnal migrant but is quite local in distribution. In Eastern Massachusetts it has been found for many years at Cambridge and Concord. In general habit, it quite closely resembles the Swamp Sparrow, but in flight, is more like the Song Sparrow.

None of this species have been known to breed in New England, for almost all pass far north of us in summer, reaching quite to the Arctic Region, but the nest has been found in the Adirondacks.

SONG. Lincoln's Sparrow has a rather feeble chirp while with us; the song is low, prolonged, rather varied and pleasing. It is given as the bird sits in some elevated situation.

Swamp Sparrow.

MELOSPIZA GEORGIANA.

Plate XV, Fig. 2.

Top of head, reddish brown, with forehead and sides of head ashy. Back, reddish yellow, broadly streaked with dark brown. Beneath, white, unstreaked but strongly tinged with ashy in a band across breast. Outer edges of wing and tail feathers bright reddish brown. Winter adults have an ashy stripe in the middle of the crown. Young birds have the sides and flanks streaked with dusky, and the reddish brown of the head streaked with black, and the sides yellowish. Nestlings are quite yellowish throughout, and the lower neck and breast are streaked with dark brown.

DIMENSIONS. Length, 5.70; stretch, 7.76; wing, 2.85; tail, 2.25; bill, .45; tarsus, .82.

COMPARISONS. We have no other Sparrow with short wings and a rounded tail which combines the red of the crown with unstreaked, lower parts. The nestlings are slightly streaked, and the crown is not red, but these may be always distinguished by the very reddish edgings to the wing and tail feathers.

NESTS AND EGGS. Nest placed on the ground, usually in swampy places, composed of dried grasses and weeds, lined with finer grass and weeds. They are deeply cup-shaped, about four inches in diameter, and about two and a half inches deep. Eggs four or five in number, oval in form, pale



bluish green in color, spotted and often quite coarsely blotched with reddish brown, lilac and umber. The coarse blotches or splashes are quite characteristic.

GENERAL HABITS. The Swamp Sparrow is a bird of rather retiring habits, and as its name indicates, an inhabitant of low, marshy thickets. Here they somewhat resemble the Song Sparrows, but are rather more shy than that species. They arrive from the south in early April, and scatter over the whole of New England, extending their range to Labrador although a few are said to spend the winter regularly in the Fresh Pond swamps near Cambridge, Massachusetts, the greater number depart in early November.

SONG. In autumn, the Swamp Sparrows give a short, low murmuring warble which is quite pleasing; they also have a soft, chirp, and give a series of querulous sounding notes when disturbed. The true song uttered in spring and summer, consists of a series of rather lisping, chipping notes forming a sprightly trill, which somewhat resembles the lay of the Chipping Sparrow.

GENUS. RUFUS SPARROWS. PASSERELLA.

Rather large, stout Sparrows with the pervading color above rufus, white beneath, distinctly spotted with rufus. No white markings on wings nor tail. Bill, stout. Wings, longer than the square tail. Sexes similar.

Fox-colored Sparrow.

PASSERELLA ILIACA.

Plate XVI, Fig. 1.

Strong, stout Sparrows, over seven inches long. General color above, light rufus with rump ashy, and the feathers of back and head are edged with ashy. There are narrow, white wing bars. Beneath, white, spotted and streaked with rufus on side of neck, breast and along sides. The spots accumulate on the centre of the breast to form a patch, which is darker than the markings elsewhere. Bill, brown, with the lower mandible orange. Young, similar, but rather more rufus above, with the ashy edgings less apparant.

DIMENSIONS. Length, 7.20 ; stretch, 11.25 ; wing, 3.00 ; tail, 3.30 ; bill, .20 ; tarsus, .70.

COMPARISONS. This is the most rufus of all our Sparrows, this color and the larger size will serve to distinguish it.

NESTS AND EGGS. Nests, placed on the ground, usually concealed beneath the overhanging branches of low evergreens. They are large, rather deeply cup-shaped structures, four inches in diameter, by four in depth, composed of dried grass, and moss, lined with feathers. Eggs four or five in number, oval in form, pale green in color, spotted, blotched, and dotted, quite thickly and somewhat coarsely with reddish brown, with an under tinting of lilac markings. Dimensions from .85 to .62.

GENERAL HABITS. This large, fine Sparrow is a very common spring and autumnal migrant in New England, arriving from the south, about the middle of the month, and some linger until the last week in April. While with us, they occur in

PLATE XVI.



FIG. 1. *Polioptila*.



FIG. 2. *Towhee*.

small flocks, frequenting low thickets on the margins of woodlands, into which they retreat when disturbed. Sometimes, they occur by roadsides or along fence rows. They are often found upon the ground, scratching about among the fallen leaves in search of food. They are not especially shy birds and can be approached quite readily if moderate caution be used.

I found the Fox Sparrow abundant on the Magdalen Islands in summer, breeding in the little glades, which are surrounded by the low growing, but thick-branched spruces and hemlocks, which are so characteristic of these wind-swept islands.

The eggs are deposited about the last week in June, and the young appear late in July. The latter part of October the birds are in Massachusetts again, where they linger often until the first week in December, when they depart for the south, wintering from the Middle States to the Gulf of Mexico.

SONG. While in Massachusetts, the usual note is a sharp chirp of alarm occasionally, however, they attempt to sing, but it was not until I visited the Magdalens, that I learned that their musical efforts when with us, although fine, were but the prelude to their more finished attainments. Their summer song as given there, begins with three clear, rather rapidly given notes, uttered with increasing emphasis, then a pause ensues, and the remainder of the chant is poured forth more deliberately terminating with a well rounded note, giving a finish to a song which, for sweetness and clearness of tone, is seldom surpassed even by our best performers.

GENUS. GROUND BUNTINGS. PIPILO.

Large birds, over eight inches long, of a rather slender form. Bill, thick. Feet large. Wings, shorter than the rounded tail, which is conspicuously marked with white. Sexes dissimilar. We have one species.

Towhee.

PIPILO ERYTHROPTALMUS.

Plate XVI, Fig. 2.

Male. All of head and neck and upper parts black. There is a small spot of white at the base of the primaries, some of the feathers are edged with it, and there are four pairs of outer tail feathers which are broadly marked with white. Beneath white, with band along sides, and under tail coverts, bright reddish brown. Bill, black; iris red; feet brown.

Female has the black represented by dull reddish brown. Young have the white markings less extended, and the females are more reddish. Nestlings resemble the young females, are streaked above and below with dusky, and the iris is bluish white.

DIMENSIONS. Length, 8.04; stretch, 11.35; wing, 3.50; tail, 3.76; bill, .60; tarsus, 1.02.

COMPARISONS. We have no other member of the family which has the tail so strongly marked with white, and with so much chestnut or reddish brown on the sides.

NESTS AND EGGS. Nests placed on the ground. They are shallow, saucer-shaped structures, composed of grass, leaves, and strips of bark, loosely arranged, and lined with fine grass. External diameter is about three and a half inches; depth two.

Eggs four or five in number, rather elliptical in form, ashy white in color, spotted, dotted and blotched with reddish brown and lilac. Dimensions, .90 by .70.

GENERAL HABITS. The well known and well marked Towhee arrives from the south about the first of May, and frequents brushy pastures or thickets on the borders of woodlands and extends its range throughout New England, but is rather locally distributed through the older settled districts of the northern portions. The Towhees spend a greater portion of their time upon the ground, scratching among the leaves in search of food, and are not shy if approached with moderate caution. On account of this habit of feeding on the ground, these birds are sometimes called Ground Robins.

They breed about the middle of May, often placing the the nest in a clump of bushes, and the female sits quite closely, and I have often managed to get within a few feet of her before she left the eggs.

SONG. If the Towhee were less well marked, it could be readily recognized by its alarm notes, for when disturbed, it constantly reiterates its name of "towhee" given very decidedly with the accent on the last syllable. This note is is oftentimes interpreted as being chewink, and this name is sometimes applied to the bird. In addition to this note, which is common to both sexes, the males sing a loud, clear, but somewhat detached song. This is given as the bird sits perched upon some elevated situation, generally the highest tree which he can find in the neighborhood of the nest.

GENUS CARDINALS. CARDINALIS.

Large birds, over eight inches long, with thick bills, crested heads, and bright colors. The wings are rounded, and are considerably shorter than the rounded tail. We have one species with sexes dissimilar.

Cardinal Grosbeak.

CARDINALIS VIRGINIANUS.

Plate XVII, Fig. 1.

Male, bright vermillion red, duller on back, wings and tail; line at base of bill, chin and throat black. Bill, yellowish red. Female has the wings and tail as in the male, and the vermillion above is replaced by yellowish brown, and beneath by red. The black of the head is less extended. Young birds are duller.

DIMENSIONS. Length, 8.40; stretch, 11.00; wing, 3.35; tail, 4.40; bill, .87; tarsus, .99.

COMPARISONS. Readily known by the large size, crested head, thick, red bill and vermillion color.

NESTS AND EGGS. Nests placed in trees. They are rather compact, but shallow structures, composed of weeds, leaves and Spanish moss, lined with fine grass. They are about four and a half inches in diameter, with a depth of two inches. Eggs, three or four in number, elliptical in form, ashy-white in color, spotted, blotched and dotted irregularly with reddish brown and lilac. Dimensions, 1.00 by .80.

GENERAL HABITS. The well known Cardinal is a rare visitor to extreme southern New England; it breeds regular-



Fig. 1. *Caenobryce gressiniae*.



Fig. 2. *Formica gressiniae gressiniae*.

ly, however, in Central Park, New York, where it is a constant resident.

The Cardinal frequents low shrubbery, where for a bird of such bright plumage, it can conceal itself more effectually than one would suppose. They feed upon weed seeds in winter, and in spring on the newly grown seeds of the maples. They are of a social disposition, and frequently gather in considerable numbers about some favorite feeding ground. They are usually resident wherever they occur.

SONG. The ordinary note of the Cardinal, and one which is emitted by both sexes, is a sharp chirp, but in spring, the male has a loud, clear song which he repeats frequently, but when singing, he usually remains concealed in his favorite thicket.

GENUS. SONG GROSBEAKS. HABIA.

Large birds, about eight inches long, with a thick, heavy bill. The males are black and white with white markings on wings and tail, the females duller. Wings, pointed, and about equal in length to the square tail.

Rose-breasted Grosbeak.

HABIA LUDOVICIANA.

Plate XVII, Fig. 2.

Male. Head and neck all around, and upper parts, black. Band on wing, base of primaries, spots on tips of secondaries, rump, broad spots on three pairs of outer tail feathers and lower parts, white, with a triangular spot on breast, bend of

wing and under wing coverts rose. Bill, whitish. Female, brown above streaked with dusky, buff below, also streaked with dusky. There is a medium and supercillary stripe of whitish. (See Fig. 11). Wings and tail, brown without white markings. There is no rose, but the under wing coverts are yellow. Young male similar, but more buffy above with rosy under wing coverts, and with the white wing markings, but the tail is brown. Young birds are more broadly striped than the adults. Nestlings are wholly buff, marked with black.

DIMENSIONS. Length, 7.75; stretch, 12.50; wing, 4.00; tail 3.25; bill, .68; tarsus, .75.

COMPARISONS. Adult males, may be known at once by the black above, white beneath, and rosy breast, and the females and young by the large, heavy bill and colored wing lining.

NESTS AND EGGS. Nests placed in trees or bushes. They are shallow, rather slight structures, composed of sticks, rather loosely arranged and lined with fine rootlets and grass. Eggs, three or four in number, oval in form, light bluish green in color, spotted and blotched rather coarsely with reddish brown and lilac.

GENERAL HABITS. The Rose-breasts make their appearance about the first week in May. They frequent open woodlands when they first come, but soon scatter about the orchards and gardens. They are, however, fond of the vicinity of water courses which are bordered with bushes. This habit of frequenting orchards, has recently been acquired by this fine Grosbeak. Possibly the fact that their numbers are increasing may have something to do with this change of habit. Audubon, as is well known, considered this species quite

rare, but it has gradually been growing more and more abundant until it has become one of our most common species.

The Rose-breasts build their nests in early June. The site of the nesting place is often a clump of bushes by the side of a favorite stream, but they often breed in fruit trees in orchards and gardens. These Grosbeaks are never shy, and when the female is setting, she will permit one to approach within two or three feet of her without becoming alarmed. If captured when young, they become exceedingly tame. The Rose-breasted Grosbeaks occur all over New England, but are among the earliest of the family to migrate, departing the first week in September. They winter south of the United States.

SONG. The ordinary notes of the Rose-breast which is used by both male and female, is a sharp chirp, given in quite a metallic-like tone. The song is among the finest of all our bird cantatas, ringing out loud, clear and melodiously, especially in the still mornings of early June. Some parts of the song remind one of the notes of the Robin, others are not dissimilar to a portion of the lay of the Scarlet Tanager, but lack the husky intonation of that species. There is considerable individual variation to the song; some birds give a much more melodious carol than others.

GENUS. PAINTED SPARROWS. PASSERINA.

Small birds, less than six inches long. The male of our single species is bright greenish blue. The wings are longer than the nearly even tail.

Indigo Bird.

PASSERINA CYANEA.

Plate XVIII Fig. 1.

Male, greenish blue throughout, darkest anteriorly. Wings, and tail, brownish. Female, reddish brown throughout, lighter beneath, and more or less tinged with blue. In autumn, both sexes are quite similar, but the adult male is brighter. Young resembles the female. It takes two or three years to perfect the full dress of the male, hence birds in mixed reddish and blue plumages are frequently seen.

DIMENSIONS. Length, 5.15 ; stretch, 8.50 ; wing, 2.30 ; tail, 2.10 ; bill, .65 ; tarsus, .75.

COMPARISONS. We have no other species in New England, which is blue in the adult male, and uniform reddish, without wing markings or streakings in the female, excepting the Blue Grosbeak, but this is a larger bird over six inches long, with a larger, heavier, bill. (See description of this species in appendix.)

NESTS AND EGGS. Nests placed in low bushes and thickets, composed of grass, leaves, etc. lined with finer material. Eggs almost always four in number, oval in form, becoming pale bluish green in color, usually unmarked, but occasionally finely dotted with reddish brown.

GENERAL HABITS. The Indigo Birds arrive from the south early in May and usually frequent bushy hillsides, which slope up from swampy thickets. The nests are almost always placed in a low bush on the edge of some dense thorny undergrowth, and is thus almost completely concealed. The

PLATE XVIII.



Fig 1 Indigo Bird.

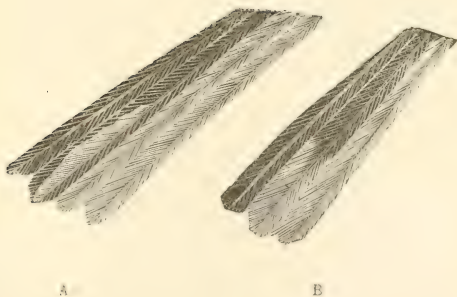


FIG. 2. Outer tail feathers of A, Snow Bird B, Vesper Sparrow.

eggs are deposited early in June. In autumn, the Indigos gather in flocks often in company with other Sparrows in weedy fields, and as at this season, all are in the reddish brown dress of the female, they are quite inconspicuous. This brown dress is assumed by the males with the autumnal moult and the blue plumage is resumed again in spring, after a second moult, which occurs before they leave their winter quarters, far south of the United States.

At all times the Indigo birds are very shy and should be approached with caution. The males appear perfectly black when seen against the light from below, but when viewed from above or on a level with one's eye, the beautiful blue colors may be seen.

SONG. The ordinary alarm note of the Indigo bird, which is given by both sexes, is a rather sharp chirp. The song of the male, which is uttered as the bird is perched on the top of the highest tree, which he can find in his immediate neighborhood, is an exceedingly, lively, lisping chant, given with considerable energy, but ends very abruptly. The whole performance is not musical nor very pleasing. They sing very persistently and often nearly continuously for an hour at a time, and their songs may be heard frequently as late as the first week in August.

A P P E N D I X.

CASUAL VISITORS.

Brewer's Sparrow.

SPIZELLA BREWERI.

Size, form and general coloration, of the Chipping Sparrow, but differs in being paler, with all of the markings indistinct, and in having no clear chestnut crown, this being permanently streaked all over with narrow lines of dusky. A western species; a single young male, being recorded by Mr. Wm. Brewster, as having been taken at Watertown, Massachusetts, December, 15th, 1893.

Shufeldt's Snow Bird.

JUNCO OREGONUS SHUFELDTI.

Size and form of the Black Snowbird, but darker above, with back dull reddish brown, and sides of a paler tint of the same. This is a sub-species of the Oregon Snowbird which occurs in the west, and is given as a New England bird upon the authority of Mr. Wm. Brewster, who records a specimen taken at Watertown, Massachusetts, March, 25th, 1874.

Blue Grosbeak

GUIRACA CAERULEA.

Fig. 9.

Male, brilliant blue throughout, darkest on the back. Wings black, crossed by two reddish yellow bands. Tail black. Female, yellowish brown, paler below, tinged with black.

Length, 6.55; stretch, 11.10; wing, 3.35; tail, 3.00; bill, .60; tarsus, .90. This species occurs regularly in Eastern United States as far north as Central Pennsylvania. A specimen was taken on Grand Manan, a few years ago, and one in Brookline, Massachusetts, May 29, 1880, the latter being the only known New England example.

Chestnut-collared Longspur.

CALCARIUS ORNATUS.

Collar on back of neck, bright chestnut. Top of head, stripe behind eye, spot on lower part of ear coverts, lesser wing coverts and lower parts (excepting chin, throat, sides and flanks, under wing and tail coverts, which are white) black. This black beneath is frequently overwashed or marked with chestnut. Above, dark brown, with most of the feathers edged with grayish. Tail, brown, with two or three outer feathers white. Female similar, but duller. Length, 6.00; wing, 3.00; tail, 2.00. A western species occurring on the prairies, but a single specimen was taken at Magnolia, Massachusetts, July 28, 1876.

Lark Bunting.

CALAMOSPIZA BICOLOR.

Male, black throughout, with a large white patch on wing, and white markings on tail. Female, brownish, streaked above and below, where the tint is lighter. Patch on wing as in male. West of the Mississippi River, but casual east. One taken at Lynn, Massachusetts, December 5th, 1877.

INTRODUCED SPECIES.

English Sparrow.

PASSER DOMESTICUS.

Fig. 10.

Size, large. Form, robust, reddish brown above, conspicuously streaked with black; crown and rump ashy. Beneath, grayish white, with forehead and large patch on breast black. Female and young without the black of throat.

These birds, now so abundant, were introduced into this country from Europe. This truly deplorable event occurred in 1850, when eight pairs were brought to New York City. They were introduced into Boston in 1860.

European Goldfinch.

CARDULIS CARDULIS.

Larger than the American Goldfinch. Yellow beneath, greenish above, wings and tail black, prominently marked with white; space about bill, red.

Introduced from Europe, and now occurs rarely about Boston as a constant resident.

HYPOTHETICAL SPECIES.

Brewster's Linnet.

ACANTHIS BREWSTERI.

Resembles the Redpoll in size, form and general color, but has no red on the crown, and is tinged with sulphury yellow on the rump, and with yellowish on breast and along sides. Wings with two yellowish bands, and the feathers of these and the tail are narrowly edged with pale sulphury yellow.

A single specimen of this singular bird was obtained by Mr. Wm. Brewster, at Waltham, Massachusetts, a number of years ago from a flock of Redpolls. No other specimen has since been seen.

SYNOPSIS OF SPECIES.

The following synopsis of species is intended to aid the students in identifying our Sparrows, Finches, etc., when seen living in adult plumage.

The family characters as given on pages 1-6 should be carefully studied, in order that a member of this group may be recognized, then the size, absence or presence of white on the tail, color, and comparative length and form of tail as given in the synopsis will serve to distinguish the species.

No character is given which cannot readily be seen by the ordinary vision at ten feet distant in a fair light, and with a good field or opera glass the bird can often be brought much nearer.

Following, is given an example of the use of the synopsis with a member of this family in sight. First, note its size, which, after a little practise, can readily be determined. As a rough guide, it may be well to state that the page upon which this is printed is about six inches long. If the bird is about as long as this or a little longer, we turn to the synopsis, and find that it falls under C; next, note if the tail has white markings. Most birds spread the tail slightly, quite frequently as they perch, and more widely as they fly, hence, by watching a moment the outer tail feathers, on which the markings are, can be seen, especially from behind. Should the white be seen, the species falls under A.

Now note if there are streakings above and below. Should there be, we find that we come to section A in the running type

with a single species, under this heading, which is indicated by an asterisk (*) as are all the species. A minute inspection will clearly show that we have a Vesper Sparrow before us, described, as seen by the number following the name, on page 36. Consulting the opening lines under the name, we find that a figure of its head is given on Plate VIII, Fig. 2. And the form of its tail is given on Plate V, on which is figured form of the tails of many of the genera.

Should the tail be without white markings, we turn to section B, printed in the same type as section A, and note first, if the head be reddish brown. Should this be true, and there are furthermore, no streaks beneath, which characters we find given in section A in the running type, we next observe the tail, and see if this is forked, and whether it appears to be shorter than the wings. We can judge of this, by noting whether the wings project down on the tail or not; if they do we may say that they are longer, and so we consult the species under section a.

Now, under this section, we find three species given, two, which are yellowish ashy beneath, with no dark line through the eye.

Thus it is best to look at once for the dark line through eye and this, when present, readily can be seen, as it is very apparent. Should it be found, we have, as is evident, the third species, or Chipping Sparrow, before us, and by consulting the description, given on page 10, can assure ourselves of this fact by studying the more extended description there given.

To the above example it may be added that it is of course, well to keep the season of the years, when the observation is

made in mind, as the times of the appearance of each species is given in the Synopsis, thus it would be, as far as the observation of ornithologists extend, useless to look for a Chipping Sparrow in January in New England, although a Tree Sparrow would quite likely be found then. Two or three of the merely casual or accidental visitors are omitted from the Synopsis.

SYNOPSIS.

A, large, 7.50 to 8.50 long.

A. Tail, without white markings.

A. Head, crested.

* Carmine throughout; female duller. Casual visitor.

CARDINAL GROSBEAK.

72

B. Head, not crested.

a. Bill, yellow.

* Dusky yellow, wings and tail, black. Casual winter visitor. EVENING GROSBEAK.

57

b. Bill, black.

* Rosy, often gray. Wing bars, white. Winter visitor.

PINE GROSBEAK.

55

B. Tail, with white markings.

A. Sides chestnut. Bill, black.

* Black above and on head and neck all around. White beneath. TOWHEE.

70

B. Sides not chestnut. Bill, white.

* Black above, with broad white markings. White beneath. Breast rose. Female, brown, streaked above and below. No rose. White line over eye. See fig. 11. Summer resident. ROSE-BREADED GROSBEAK.

73

B. Medium, over 6.25, under 7.50 long.

A. Tail with white markings.

A. No streaks below.

a. Throat and breast, black.

* Brownish; collar behind, chestnut. Sides, streaked.

Autumnal migrant. LAPLAND LONGSPUR. 38

b. Throat, white, with black maxillary lines.

* Brownish above; white below, unstreaked; black central spot on breast. Casual visitor. LARK FINCH. 20

c. No black markings about head.

* White, overwashed with yellowish red. Back, wings and tail, partly black. SNOW BUNTING. 40

B. Tail, without white markings.

A. Throat, black.

* Yellowish brown above, white beneath. Casual in summer. BLACK-THROATED BUNTING. 9

B. Throat white or whitish.

a. Yellow in front of eye.

* Reddish brown above, streaked. Throat, distinctly white. Common spring and autumnal migrant; summer resident in northern portion. WHITE-THROATED SPARROW. 16

b. No yellow on head.

* Grayish brown above, streaked. Throat, indistinctly white. Spring and autumnal migrant. WHITE-CROWNED SPARROW. 19

c. Color, nearly uniform. No streakings.

Male, blue; female, reddish brown; both with buffy wing bars. Accidental. BLUE GROSBEAK. 79

D. Color, not uniform, streaked above, spotted below.

* Yellowish red above; white below. Spring and autumnal migrant. FOX-COLORED SPARROW. 67

C. Small, 6.00 long or a little over or under.

A. Tail, with white markings.

A. Streaked above and below.

* Yellowish brown above; whitish below. Summer resident.

VESPER SPARROW.

36

B. No streakings anywhere.

* Dark slaty above, and on head and breast; white beneath. Spring and autumnal migrant. Winters in middle and southern, summer resident in northern portion. SNOW BIRD. 60

B. Tail, without white markings.

A. Top of head reddish brown. No streaks beneath.

a. Tail, forked, shorter than wings.

* No dark line through eye. Beneath, yellowish ashy, with single, central brown spot. Spring and autumnal migrant; winter resident in middle and southern portion. TREE SPARROW. 13

* No dark line through eye. Beneath, yellowish ashy, no central spot. Summer resident. FIELD SPARROW. 14

* Beneath, dark ashy. Black line through eye; no central spot. Summer resident. CHIPPING SPARROW. 10

b. Tail, rounded, equal to wing.

* White beneath, with ashy band across breast. Chiefly summer visitor. SWAMP SPARROW. 66

B. Top of head uniform with back, both streaked; streaks above and below.

a. Tail, rounded, and as long as wing. No yellow in front of eye.

* No buff across breast. Chiefly summer resident. SONG SPARROW. 62

* Buff band across breast. Local spring and autumnal migrant. LINCOLN'S SPARROW. 65

b. Tail, much shorter than wings, slightly forked. Feathers not pointed. Yellow spot in front of eye.

* Dark colors predominating above. Summer resident. SAVANNAH SPARROW. 31

* Light colors predominating above. Chiefly spring and autumnal migrant on coast. IPSWICH SPARROW. 33

c. Tail, about equal to wings, with feathers sharpened.

* Buffy, no yellow in front of eye. Summer visitor to coast. SHARP-TAILED SPARROW. 22

* Grayish, yellow spot in front of eye. Summer visitor to coast of Connecticut, casual further north. SEA-SIDE SPARROW. 25

* Greenish buff above, buff below. Local summer visitor. HENSLow's SPARROW. 29

c. No streaks below. Top of head uniform with back.

* Reddish streaks above, buffy below ; yellow in front of eye. Summer resident, local. YELLOW-WINGED SPARROW. 27

d. Colors uniform. No streaks.

* Male, blue ; female, reddish brown, no wing bands. Summer resident. INDIGO BIRD. 76

e. Tail, deeply forked. Bill, not crossed.

a. Head, sub-crested.

* Male, crimson lake ; female grayish, streaked. Resident. PURPLE FINCH. 53

b. Head, not sub-crested. No streakings.

* Males yellow in winter and females greenish, wings and tail, black. Resident. AMERICAN GOLDFINCH. 42

* Yellow beneath, with red at base of bill. Introduced. EUROPEAN GOLDFINCH. 81

c. Streaked throughout.

* Top of head crimson. Wing bands, whitish. Winter visitor. RED-POLLS. 46 & 48

* No crimson on head. Wing bars, sulphury yellow. Winter visitor to southern, breeds in northern portions. PINE SISKIN. 44

* No crimson on head. Wings, tinged with sulphury yellow. Hypothetical species. BREWSTER'S LINNET. 81

f. Tail, deeply forked. Bill, crossed.

* No white on wing. Frequent winter visitor. AMERICAN CROSSBILL. 49

* White patch on wing. Irregular winter visitor. WHITE-WINGED CROSSBILL. 51

g. Tail, moderately forked.

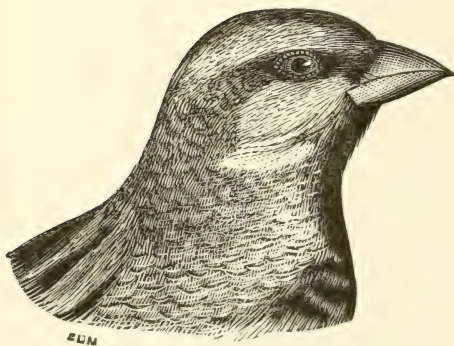
* Top of head unstreaked; back streaked, no streaks below. Male with black throat patch, female without. Introduced. ENGLISH SPARROW. 81

FIG. 9.



Blue Grosbeak.

FIG. 10



English Sparrow.

FIG. 11.

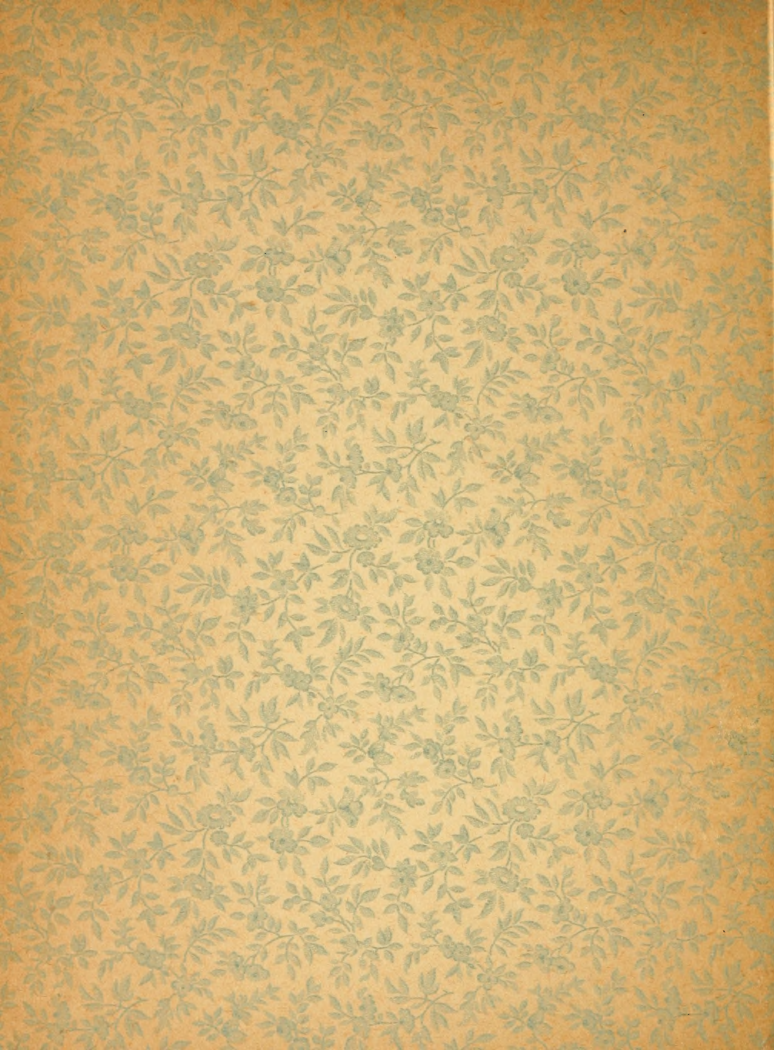


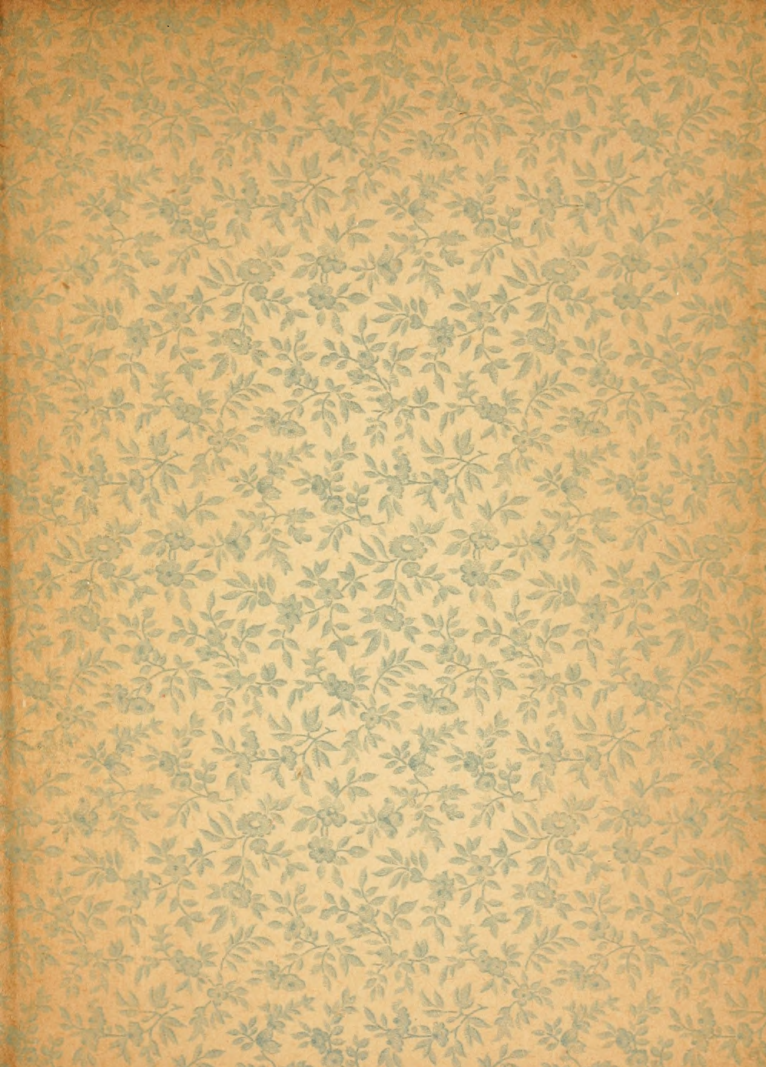
Female Rose-breasted Grosbeak.

I N D E X .

- Acadian Sharp-tailed Sparrow 25
- Acanthis
 - exilipes 48
 - holboellii 48
 - linaria 46
 - rostrata 48
- American Crossbill 49
- American Goldfinch 42
- American Hawfinches 57
- Ammodramus
 - candicatus 22
 - c. acadicus 25
 - c. nelsoni 24
 - maritimus 25
- Appendix 79
- Bay-winged Sparrow 35
- Black Snow Bird 60
- Black throated Bunting 9
- Blue Grosbeak 79
- Brewer's Sparrow 79
- Calcarius
 - laponicus 38
 - ornatus 80
- Calomospica bicolor 80
- Carpodacus purpureus 53
- Casual visitors 79
- Chestnut-collared Longspur 80
- Chondestes grammacus 20
- Coccothrustes vespertina 57
- Coturniculus passerina 27
- Crossbills 49
- Dedication iii
- English Sparrow 81
- European Goldfinch 81
- Evening Grosbeak 57
- Family characters 1
- Field Sparrow 14
- Fox Sparrow 68
- Goldfinches 42
- Grass Sparrows 31
- Greater Red-poll 48
- Ground Bunting 70
- Gray-crowned 70
- Habia ludoviciana 74
- Henslow's Sparrow 20
- Hoary Redpoll 48
- Holboell's Redpoll 45
- Hypothetical species 81
- Indigo Bird 76
- Introduced species 81
- Introduction v
- Junco hyemalis 60

- Lapland Longspur 38
 Lark Bunting 80
 Lark Finch 20
 Lincoln's Sparrow 65
 Longspurs 38
 Loxia
 americana 49
 leucoptera 51
 Marsh Sparrows 22
 Melospiza 62
 fasciata 62
 georgiana 66
 lincolni 65
 Nelson's Sharp-tailed Sparrow 24
 Painted Sparrow 75
 Passerculus princeps 33
 savanna 31
 Passer domesticus 81
 Passerina cyanea 76
 Passerella iliaca 68
 Pine Grosbeak 55
 Pine Siskin 44
 Pinicola enucleator 55
 Pipilo erythrophthalmus 70
 Plectrophenax nivalis 40
 Poocaetes gramineus 36
 Prairie Sparrows 20
 Purple Finch 53
 Redpoll 46
 Rose-breasted Grosbeak 73
 Rosy Finches 53
 Rufus Sparrows 67
 Savannah Sparrow 31
 Sharp-tailed Sparrow 22
 Silk Bunting 9
 Snow Bird 60
 Snow Bunting 40
 Song Grosbeaks 73
 Song Sparrow 62
 Spinus pinus 44
 Spinus tristis 42
 Spiza americana 9
 Spizella
 breweri 79
 monticola 13
 pusilla 14
 socialis 10
 Swamp Sparrow 66
 Synopsis 83
 Tree Sparrow 13
 True Sparrows 10
 Towhee 70
 Vesper Sparrow 36
 White-crowned Sparrow 19
 White-throated Sparrow 16
 White-winged Crossbill 51
 Yellow-winged Sparrow 27
 Zone-throated Sparrows 16
 Zonotrichia
 albicollis 16
 leucophrys 19





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